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ENVIRONMENTAL IMPACT STATEMENT

Denver Federal Center Master Site Plan
Lakewood, CO



U.S. General Services Administration
Rocky Mountain Region

September 1997

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ENVIRONMENTAL IMPACT STATEMENT

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General Services Administration
Rocky Mountain Region

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September 1997

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DENVER FEDERAL CENTER MASTER SITE PLAN

ENVIRONMENTAL IMPACT STATEMENT

DENVER, COLORADO 80225

Final Environmental Impact Statement

GSA Contract No. GS-08-94-JWD-0060
Order No. P-08-95-0516

General Services Administration

Denver Federal Center Master Site Plan
Lakewood, Colorado

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303/236-7131 (x250)

September 1997

Abstract:

The purpose of the Environmental Impact Statement (EIS) is to identify and evaluate the potential impacts to the natural and human environment associated with the adoption and implementation of the proposed Denver Federal Center master site plan and the No Action alternative (the continuation of current development objectives and policies). This EIS describes and evaluates potential impacts related to the following resources: topography; soils; hydrology and water quality; air quality; noise; vegetation; wetlands; wildlife; threatened and endangered plants and wildlife; cultural resources; population; employment and income; housing; community services; recreation resources; land use; infrastructure/utilities; and transportation and traffic. In addition, the EIS evaluates the following: cumulative impacts; unavoidable adverse impacts; relationship between short-term use of the human environment and the maintenance and enhancement of long-term productivity; irreversible or irretrievable commitment of resources; and conflicts with Federal, regional, state, local, or Indian Tribe land use plans, policies, and controls.

Comment Due Date: October 24, 1997

Number of Volumes: 1

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Executive Summary

( ) Draft (X) Final Environmental Impact Statement

Denver Federal Center Master Site Plan
Lakewood, CO

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ES.0 Executive Summary

The Denver Federal Center (DFC) is a 670-acre government-owned installation located within the City of Lakewood in Jefferson County, Colorado. The DFC contains over three million occupiable square feet of office, storage, laboratory, and other specialized space in over 90 buildings. Over 25 Federal agencies and bureaus are currently housed at the DFC. The General Services Administration (GSA) is responsible for the operation and maintenance of the DFC land, facilities, and infrastructure in support of the DFC's tenant agencies. The GSA has prepared a master site plan to serve as a guide for the future use and development of the DFC property.

ES.1 Purpose of and Need for the Proposed Action

In 1979, the GSA prepared the first DFC master site plan to guide site development for a period of two decades. Since this planning time frame has nearly expired, and the demographics and services of the DFC Federal tenants have changed, there is a need for a new master site plan. The purpose of the proposed master site plan is to adequately plan for the efficient use and potential future development of the DFC property. The purpose of this document is to evaluate the potential impacts to the natural and human environment associated with the adoption and implementation of the proposed master site plan, as well as the No-Action alternative (the continuation of current development objectives and policies).

ES.2 Alternatives Considered Including the Proposed Action

The two alternatives evaluated in this document are: the Proposed Action alternative; and the No-Action alternative. The Proposed Action alternative is defined as the adoption and

implementation of the proposed DFC master site plan. The proposed master site plan is designed to have the flexibility to accommodate and adjust to a range of possible future scenarios relating to intensity of use of the DFC property and assets. These possible scenarios are generalized into three different level-of-use categories that have been chosen to summarize the most likely outcome of future conditions. The scenarios represent logical points along a continuum of possible futures, and are based on potential levels of activity for the DFC over the next 20 years. The scenarios described under the proposed action alternative include: status quo; the contracted use of the DFC; and moderate growth of the DFC. The No-Action alternative is defined as the continuation of operations, management, and development decisions at the DFC under existing policies and plans.

ES.3 Affected Environment

The implementation of the Proposed Action has the potential to affect various environmental resources within the DFC property, as well as the potential to affect certain resources beyond the boundaries of the DFC. The following environmental resource areas are described and assessed in this document: Physical Environment (topography, soils, hydrology and water quality, air quality, and noise); Biological Resources (vegetation, wetlands, wildlife, and threatened and endangered species); Cultural Resources; Socioeconomic Factors and Infrastructure (population, employment and income, housing, community services, recreation resources, land use, and infrastructure/utilities); and Transportation and Traffic. Each resource description focuses on the relevant attributes and characteristics of that resource with the potential to be affected by the Proposed Action, or that represent potential use encumbrances to the Proposed Action.

ES.4 Consequences

The potential consequences/impacts associated with the two alternatives are identified for each of the evaluated environmental resources as well as the following: Cumulative Impacts; Unavoidable Adverse Impacts; Relationship Between Short-Term Use of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity; Irreversible or Irretrievable Commitments of Resources; and Conflicts with Federal, Regional, State, Local, or Indian Tribe Land Use Plans, Policies, and Controls. The implementation of the proposed master site plan anticipates an insignificant level of impact to the following: Hydrology and Water Quality; and Land Use. These insignificant impacts are derived from the known and suspected sources of contamination at the DFC associated with former land uses at the site. These impacts are the subject of an independent site-wide investigation at the DFC that will result in the implementation of site-wide remediation activities. The anticipated impacts associated with the Proposed Action and the No-Action alternatives for each of the evaluated resources are shown in the following matrix of impacts. In addition, the Proposed Action is anticipated to result in an insignificant level of cumulative impacts.

Matrix of Impacts

Resource Areas	Alternatives	
	Proposed Action	No-Action
Topography	N	N
Soils	N	N
Hydrology and Water Quality	I	N
Air Quality	N	N
Noise	N	N
Vegetation	N	N
Wetlands	N	N
Wildlife Resources	N	N
Threatened and Endangered Species	N	N
Cultural Resources	N	N
Population	N	N
Employment and Income	N	N
Housing	N	N
Community Services	N	N
Recreation Resources	N	N
Land Use	I	N
Infrastructure/Utilities	N	N
Transportation and Traffic	N	N

N = No Adverse Impacts I = Insignificant Adverse Impacts
S = Significant Adverse Impacts B = Beneficial Impacts

ES.5 List of Federal, State, and Local Agencies from which Comments are Requested

Federal

Advisory Council on Historic Preservation, Western Office of Review
Denver Federal Center
- Cooperative Administrative Support Unit
- Development Day Care Center
- Wellness Center

Federal Emergency Management Agency (FEMA)
Government Printing Office (GPO)
National Archives and Record Administration (NARA)
Office of Personnel Management (OPM)
U.S. Department of Agriculture (USDA), Animal Damage Control
U.S. Department of the Army (USARC), 6th Brigade, 91st Division
U.S. Department of Energy (DOE), Western Area Power Administration (WARA)
U.S. Environmental Protection Agency (EPA)
- Environmental Review Branch
- ESD Laboratory
- National Enforcement Investigation Center

U.S. Department of Health and Human Service (HHS)
- Federal Employees Occupational Health Division
- Food and Drug Administration (FDA)

U.S. Department of Interior (DOI)
- Bureau of Land Management (BLM)
- Bureau of Reclamation (BOR)
- Fish and Wildlife Service, Colorado State Office (USFWS)
- Minerals Management Services (MMS)
- National Park Service, Rocky Mountain Region (NPS)
- Office of the Secretary, Denver Learning Center
- Office of Surface Mining (OSM)
- U.S. Geological Survey (USGS)

U.S. Department of Labor (DOL), Mine Safety and Health Administration (MSHA)
U.S. Department of Transportation (DOT), Federal Highway Administration (FHWA)

State of Colorado
Colorado Archaeological Society
Colorado Commission of Indian Affairs
Colorado Department of Natural Resources, Division of Wildlife
Colorado Department of Pubic Health and the Environment (CDPHE), Division of Hazardous Materials and Waste Management Division
Colorado Department of Transportation (CDOT)
Colorado Historical Society (CHS)

Local/Regional
City of Lakewood
- Community Planning and Development
- Public Library

Historical Belmar Village
Jefferson County
- Board of County Commissioners
- Board of Education
- Department of Health and Environment
- Department of Highways and Transportation

Southern Ute Tribe
Ute Mountain Ute Tribe

ES.6 Date Final EIS made Available to the EPA and the Public

As of September 1997, the Final EIS will be made available for review by the EPA and the public.

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Section 1: Purpose of and Need for the Proposed Action

1.0 Purpose of and Need for the Proposed Action

This section provides generalized information relating to the purpose of and need for the Proposed Action, and provides relevant background information about the Denver Federal Center's (DFC) location, history, and function.

1.1 Purpose of the Proposed Action

The General Services Administration (GSA) has prepared a new master site plan for the purpose of adequately planning for the efficient use and future development of the DFC. GSA prepared a master site plan in 1979 to guide the development of the DFC property for a period of approximately 20 years. The proposed master site plan was developed to serve as a guide for the development of the DFC property into the 21st century. This document evaluates the potential impacts to the natural and human environments associated with the adoption and implementation of the proposed master site plan, as well as the No-Action alternative (the continuation of current development policies).

1.2 Need for the Proposed Action

Since the planning time frame for the first DFC master site plan has nearly expired, and the demographics and services of the DFC tenants have changed, GSA needed to prepare a new master site plan. The DFC is, and will remain, a Federal Government asset used primarily by Federal agencies. The GSA will continue to be primarily responsible for coordinating all construction, reclamation, maintenance, occupancy, assignment, and disposal of facilities and grounds at the DFC.

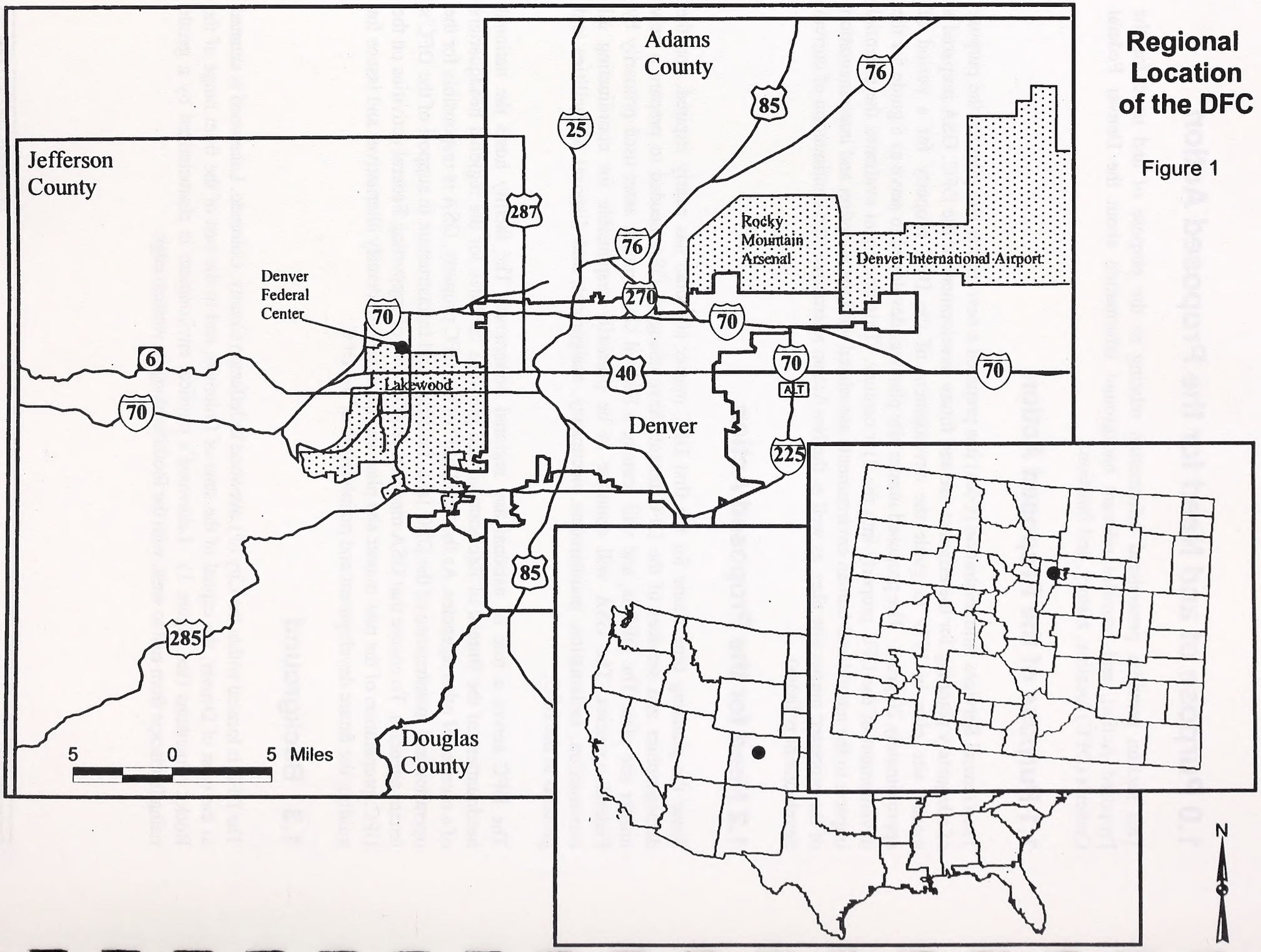
The DFC serves a role of national and regional importance. The facility hosts the national headquarters of the Bureau of Reclamation and provides facilities for the regional headquarters of a number of other agencies. As the "landlord" of the DFC property, GSA is responsible for the operation and maintenance of the DFC land, facilities, and infrastructure in support of the DFC's tenant agencies. To ensure that GSA meets its requirement of supporting Federal activities on the DFC, preparation of the new master site plan was necessary to identify alternatives and issues for guiding the future development and maintenance of the DFC.

1.3 Background

The DFC is located within the City of Lakewood in Jefferson County, Colorado. Lakewood is situated to the west of Denver, the capital of the state of Colorado, and to the east of the front range of the Rocky Mountains (see Figure 1). Lakewood's physical environment is characterized by a gentle rising landscape from east to west, with the foothills along its western edge.

Regional Location of the DFC

Figure 1



The DFC is located on a portion of property formerly known as the Denver Ordnance Plant (DOP). The DOP was located on a 2,100-acre parcel of land that was purchased by the Federal Government in January 1941. Before that time, the land was used as a farm and cattle ranch. The DOP was a munitions manufacturing and testing plant that operated from the summer of 1941 to the summer of 1945. The plant was owned by the Federal Government and was operated by the U.S. Army Corps of Engineers (Corps). Remington Arms, Kaiser Industries, and General Foods Corporation manufactured munitions and field rations at the DOP during this period. After the war, most of the 2,100 acres were sold or donated to private companies and individuals.

The DFC now encompasses 670 acres of government-owned property (see Figure 2). Numerous Federal Government agencies have occupied laboratories, storage areas, test facilities, and office space at the DFC since 1945. The DFC now contains over three million occupiable square feet of office, storage, laboratory, and other specialized space in over 90 buildings. Over 25 Federal Agencies and Bureaus are currently housed at the DFC, including the following: U.S. Department of Interior (DOI); Bureau of Land Management (BLM); Minerals Management Services (MMS); Office of Surface Mining (OSM); U.S. Geological Survey (USGS); U.S. Department of Agriculture (USDA); U.S. Forest Service (USFS); Food and Drug Administration (FDA); National Archives and Record Administration (NARA); U.S. Environmental Protection Agency (EPA); Government Printing Office (GPO); Federal Highway Administration (FHWA); Federal Emergency Management Agency (FEMA), and GSA.

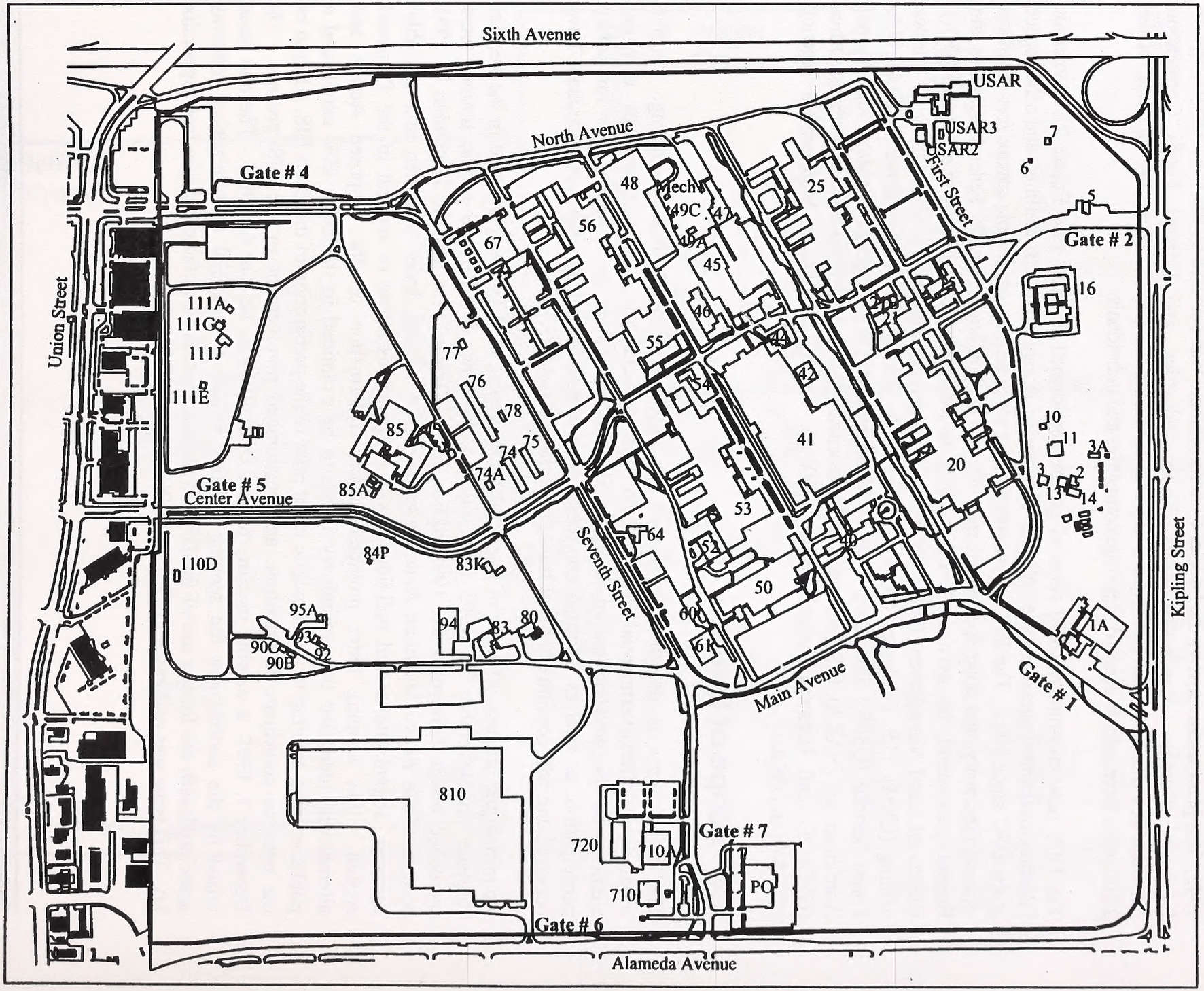
1.4 Scope of Issues

The EIS process is designed to involve the public in Federal decision-making. Public involvement/intergovernmental coordination and consultation are recognized as essential elements to the development of an EIS. Formal notification and opportunities for public participation, as well as informal coordination with government agencies and planners, have occurred and will continue to occur throughout the EIS process.

To initiate the process, a Notice of Intent (NOI) to prepare the EIS was published in the Federal Register on November 24, 1995 (Vol. 60, No. 226, pg. 58087), and public notices were published in the November 30, 1995 edition of the *Denver Post* and the December 1, 1995 edition of the *Rocky Mountain News* newspapers. A scoping letter was then sent to public agencies, organizations, and individuals with a special expertise or interest in the Proposed Action. The scoping letter provided general information on the Proposed Action and alternatives, identified the preliminary issues to be examined in the Draft EIS, announced a public scoping meeting to solicit public input prior to the preparation of the Draft EIS, advised of the need to coordinate information, and encouraged involvement in the EIS process. On December 7, 1995, a scoping meeting for the Draft EIS was held at the DFC. The one issue raised by the audience at the scoping meeting related to potential contamination concerns associated with the former use of the DFC as an ammunition manufacturing site (see Appendix D). This issue was addressed in the Draft EIS.

DFC Site Map

Figure 2



The publishing of a Notice of Availability for the Draft EIS in the Federal Register on March 7, 1997 (Vol. 62, No. 45, pg. 10558-10559) and its distribution (see Section 10.0) initiated the beginning of a 45 day public review period. On April 9, 1997 a public hearing was held at the City of Lakewood municipal building to receive comments on the Draft EIS. Public notices for the public hearing were published in the April 9, 1997 editions of the *Denver Post* and *Rocky Mountain News* newspapers. A transcript of the public hearing is provided in Appendix E. Public comments received during the Draft EIS public review period and government responses are provided in Appendix F. Public Comments were received from the following individuals at the Draft EIS Public Hearing on April 9, 1997: Mr. Bernie Goldman; Mr. John McMillin; and Ms. Andrea Garcia. Issues raised at the Public Hearing focused primarily on transportation, RTD expansion, and security/public access to the DFC. Written comments were received during the Draft EIS review period from the following agencies/individuals: The Agricultural Ditch and Reservoir Company; Colorado Department of Transportation; U.S. Environmental Protection Agency, Region VIII; Department of the Army, Omaha District Corps of Engineers; Mr. John R. Schumaker; Colorado Historical Society; Ms. Christine Pfaff; and Ms. Cathy Van Tassel. Issues raised in written comments include the following: hydrology and water quality (including the Agricultural Ditch, McIntyre Gulch, Downing Reservoir and groundwater); vegetation; wetlands; wildlife resources; cultural resources; recreation; land use (including contamination associated with prior land use); transportation and traffic; and pollution prevention.

The GSA has addressed issues relating to known and suspected sources of contamination at the DFC through the completion of several investigations and reports, and coordination with the Colorado Department of Public Health and Environment (CDPHE). Contamination-related issues are also the focus of a separate management program at the DFC. On May 24, 1996, the GSA prepared a Draft Preliminary Assessment (PA) as part of pre-remedial process to determine through a review of historic information if there has been a possible release of hazardous substances at the DFC. The Draft PA presents information regarding possible releases, and uses the EPA's Hazard Ranking System (HRS) to help in evaluating the risk associated with a possible release. Based upon the results of the Draft PA, recommendations were made regarding the need for further action. The Draft PA evaluated 18 operable units (OUs) using existing information, the results of very limited site investigations, and the HRS. The Draft PA included the following recommendations: further literature/historic review; additional site investigation/characterization work is necessary; interim remedial action for contaminated groundwater is required; and conduct an investigation to identify potentially responsible parties associated with use of hazardous materials and the generation of hazardous wastes. Further study is underway to obtain additional information on the types of hazardous materials that have been used at the DFC over the years. This information will enhance the information in the Draft PA. The Draft PA was presented to the CDPHE in July 1996.

In August 1996 the CDPHE issued a Draft Compliance Order on Consent that proposed a regulatory program for the DFC to comply with RCRA. To establish a framework for conducting further site-characterization work and remediation at the DFC, the Draft Consent Order requires a RCRA Facility Investigation Work Plan that includes several components:

- A description of all historic and current waste management activities performed at the DFC.
- An integration and evaluation of all currently available groundwater and soil sampling data.

- A preliminary listing and prioritization of all contaminated sites
- Identification of the need for the implementation of interim remediation measures.
- Individual site-specific work plans for the assessment of all identified contamination sites.

In anticipation of the need for further site remediation at the DFC, the GSA also developed the following documents:

- *Work Management Plan* (May 1996) - That sets forth a phased remediation program for addressing the known and suspected sources of contamination.
- *Quality Management Plan* (October 1996) - That sets forth procedures for quality assurance/quality control to be implemented during remediation.
- *Site-Wide Health and Safety Plan* (November 1996) -That establishes requirements for protecting site workers and the public during remediation activities.
- *Operable Unit Sampling and Screening Report* (July 1997) - Presents the results of analytical data collection that was incorporated into the re-scoring and re-ranking of the DFC Operable Units. The data will also be used in the scoping of future field investigations to improve their effectiveness.

In addition, the GSA, in cooperation with the FHWA and with the concurrence of the CDPHE, initiated an independent remediation measure in 1996 along the DFC's eastern property boundary to remediate a contaminated groundwater plume associated with a leaking underground storage tank from the FHWA's facilities in Building #52.

A Final Compliance Order on Consent (Consent Order) was signed by the CDPHE, Hazardous Materials and Waste Management Division and the GSA, pursuant to Section 25-15-308(2), CRS, of the Colorado Hazardous Waste Act on July 18, 1997. The mutual objectives of the parties in entering into this Consent Order are to establish schedules and requirements for the implementation of a sitewide assessment of all contamination resulting from activities conducted at the DFC and, if necessary, to establish the schedules and requirements for the remediation of any and all impacts to human health and the environment resulting from contamination, including contamination found to have migrated beyond the boundaries of the DFC. Within 150 calendar days of the effective date of this Consent Order, The GSA is required to provide the CDPHE a Pre-RCRA Facility Investigation (RFI) Historical Data Report. Within 120 days of the CDPHE's approval, the GSA will be required to provide a RFI report and a Risk Assessment Workplan. Within 60 days of completing the full implementation of each contamination site characterization plan as contained in the RFI Workplan, GSA will be required to submit a written report detailing the findings of the individual contamination site RFI for CDPHE review, and provide a proposed schedule for completion of a Corrective Measures Work Plan and/or make "no further action" recommendations. Within 75 days of the CDPHE's determination that the RFI characterization of each contamination site is complete, GSA will be required to submit a corrective measures work plan that evaluates the alternatives for the appropriate extent of remedial action to prevent, mitigate, and remediate the migration or release, or threatened release, of contaminants at, or from a contamination site which will also include an implementation schedule.

To evaluate the potential environmental impacts associated with the site remediation activities to be carried out or are under consideration for implementation at the DFC, the GSA prepared a *Draft Sitewide Environmental Assessment* (March 1997). The purpose of these activities are to

remediate contamination and sources of contamination at the DFC. The Draft Sitewide Environmental Assessment was prepared at a programmatic level, recognizing that additional, site-specific analyses of potential environmental impacts may be necessary as specific remediation actions are defined. If the potential impacts of the proposed action are determined to be significant an environmental impact statement would need to be prepared; if the impacts, after mitigation, are less than significant, a Finding of No Significant Impact would be issued.

Although these investigations and remediation measures are not directly associated with this EIS document, available information from these actions is referenced where appropriate. The known and/or suspected sources of contamination at the DFC represent potential encumbrances to future development or land use at the installation. Therefore, the completion of these independent investigations and remediation measures directly affects the long-term implementation of the Proposed Action.

Throughout the preparation of the EIS, an effort was maintained to locate, inform, and solicit input from interested individuals and organized groups. Individuals or organizations who submitted correspondence or who requested to be added to the mailing list will be sent copies of any future public notices. The EIS process includes three principal public involvement opportunities: after the distribution of the Draft EIS, at the Public Hearing, and after distribution of the Final EIS. Copies of the Draft EIS and the Final EIS were distributed to anyone requesting a copy, as well as available for public review at central locations including Daniels Public Library, Lakewood Public Library, and Villa Public Library (see Section 10.4). All comments received through the scoping process were addressed in the Draft EIS. All comments received during the Draft EIS 45-day public review period were addressed in the Final EIS. A 30 day public review period will begin following the distribution of the Final EIS. After receiving additional public comments, the GSA will issue of a Record of Decision (ROD) in the Federal Register.

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Section 2: Alternatives Including the Proposed Action

2.0 Alternatives Including the Proposed Action

This section of the document outlines the process followed in the development of the proposed master site plan. It includes descriptions of the alternatives considered but not carried forward, the level-of-use parameters that guided the development of the alternatives, and the alternatives actually evaluated.

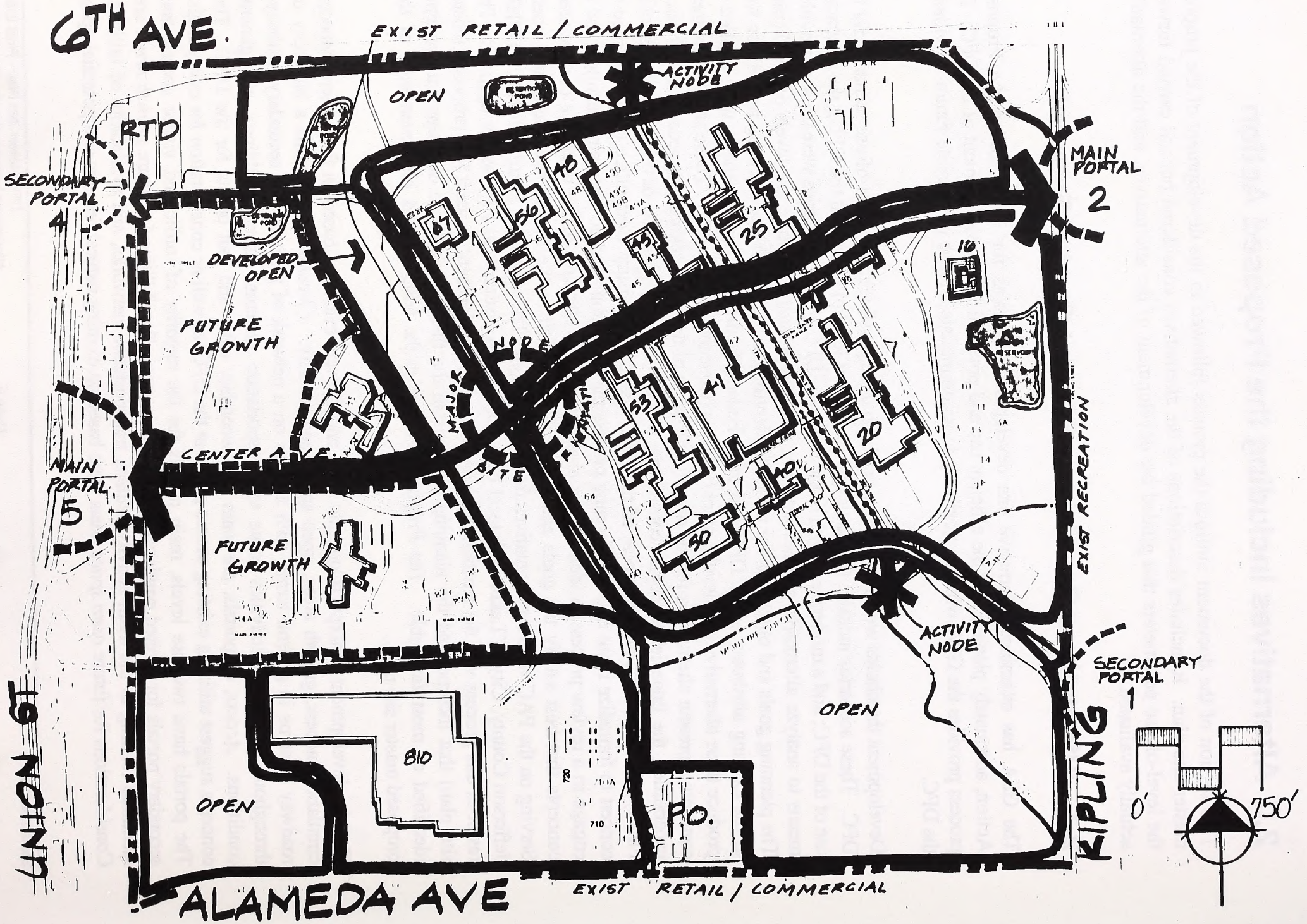
2.1 Alternatives Considered But Not Carried Forward

The GSA has examined alternative site development concepts for implementing the Proposed Action, adequately planning for the efficient use and potential future development of the DFC. The process provides the GSA with the flexibility to accommodate a range of possible future activities at the DFC.

Development thresholds were identified to establish three possible future level-of-use scenarios for the DFC. These scenarios include: the status quo (or current level of activity at the DFC); the contracted use of the DFC; and a moderate growth in the use of the DFC. These scenarios were used to provide a means to analyze alternative site development concepts against the future use levels of the facility. The planning goals and objectives for the DFC identified in the master site planning process, as well as the existing attributes of the DFC and other Federal facility planning practices, were applied to produce three alternative site development concepts (Concepts A, B, and C). These site development concepts represent alternatives for the overall utilization of the DFC, taking into account the physical capabilities, the financial/economic constraints, and the range of potential development thresholds. Finally, GSA officials and members of the DFC Planning Advisory Committee (PAC) worked in concert to formalize input into the planning process through public and government meetings, and to engage in a review process to identify and evaluate specific elements of the three site development concepts that best satisfy the goals and objectives identified in the master site planning process. Serving on the PAC were representatives from the Regional Transportation District (RTD), CDPHE, Jefferson County, City of Lakewood, local homeowners association, and DFC tenant agencies. The result of this process was the creation of a composite site development concept (the proposed master site plan) that incorporated the planning elements in the three original site development concepts identified as most favorable. The Proposed Action is the adoption and implementation of the proposed master site plan.

The site development concepts (Concepts A, B, and C) were evaluated based on five general aspects: circulation, access, growth areas, open space, and security. *Circulation* represents a hierarchy of roadway systems in general terms, with a focus on a network of primary and secondary roadways throughout the DFC. Activities relate to transportation systems, current buildings, and general conditions. *Access*, or portals, are main and secondary entry and exit points for the DFC. The concepts suggest utilizing existing access points at the DFC, as well as consideration for new portals. The portals have two use levels, main portals for the majority of traffic and visitor access, and secondary portals for limited employee and service access. Possibilities for future *growth areas* are identified relating to the main activity centers, transportation networks, and availability of utilities. Considerations for future *open space* areas were based on existing natural features and potential open

Figure 3: Site Development Concept A Map



space, recreation, and buffer areas. Heightened interest in *security* at the DFC influenced the incorporation of planning considerations such as gate access control, facility and site design, and maintenance of perimeter fencing and buffer requirements in the site development concepts.

There are a number of common components represented in all of the site development concepts. These components represent goals identified in previous tasks, physical conditions, and existing activities on the site. All concepts include maintenance of the central core area, assuming that a certain level of infill development could occur. There are also open space areas common to each concept. Open space areas on the north side of the DFC along Sixth Avenue preserve stormwater drainage/ detention areas and wildlife habitat. This open space area also serves as a visual buffer along the Sixth Avenue corridor. The southwest corner of the DFC remains as open space in all cases due to limited options for access, distance from current improvements, and other general conditions. McIntyre Gulch and the Agricultural Ditch are also maintained as natural corridors and provide opportunities for the connection of open space areas. The Regional Transportation District (RTD) Cold Springs Park-n-Ride is identified on each concept, along with a portion of adjacent land to indicate the need to plan for potential expansion of transit-related facilities in the future as identified in the master plan goals.

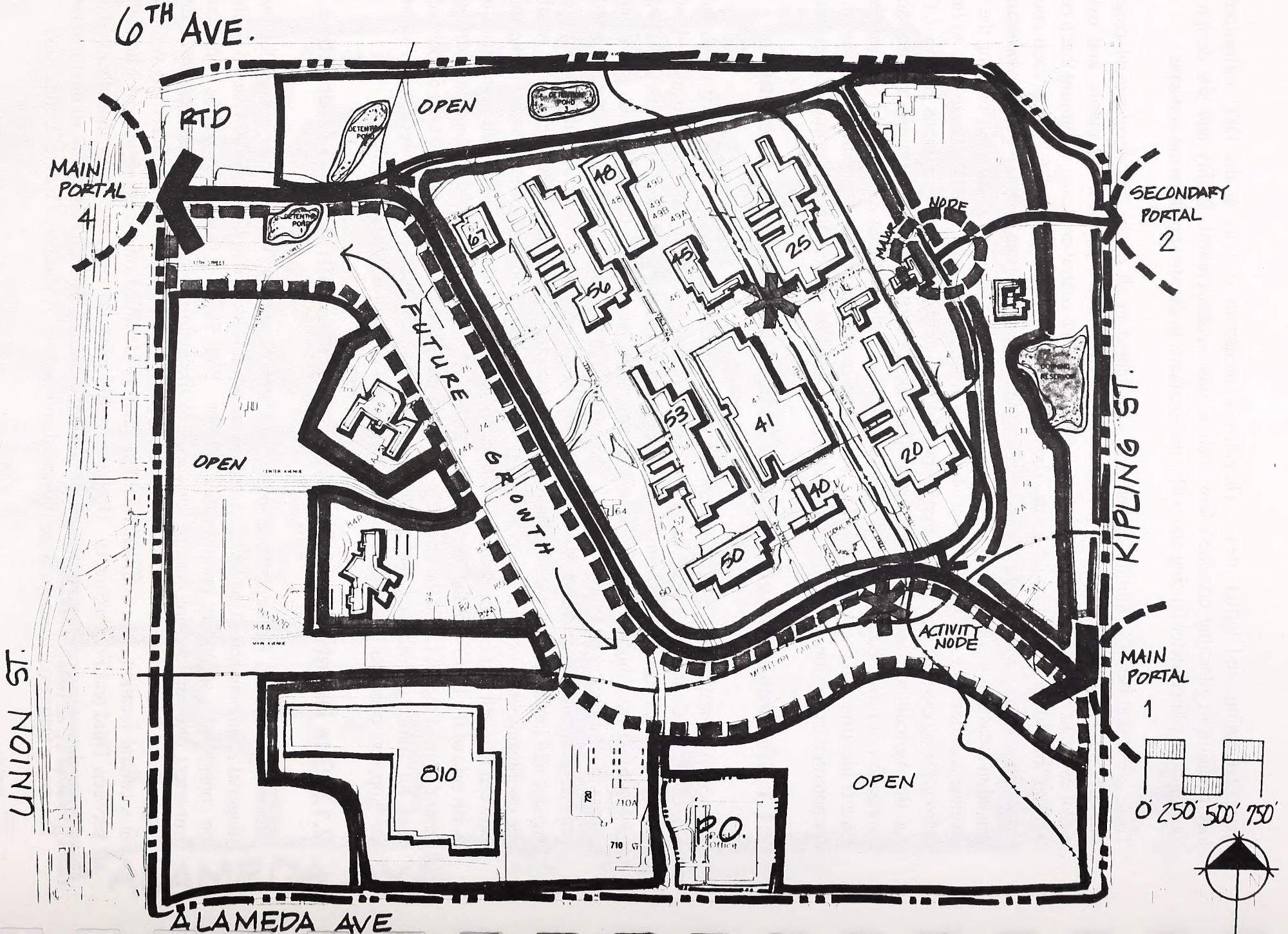
2.1.1 Site Development Concept A: East-West Arterial Alternative

Concept A is structured around a central east-west arterial, with main portals at Gate #2 on the east side of the DFC, and Gate #5 on the west side. Secondary portals are identified as Gates #1 and #4. Center Avenue is used as the main arterial bisecting the central core of the DFC. This arterial would be identified by a higher level of pedestrian amenities, landscaping improvements, and controlled access to parking lots and service roads. The intersection of Center Avenue and Seventh Street is an important orientation node, or point of decision. This would be clearly identified with direction signage and landscape treatments. Future growth is proposed for western areas of the DFC, relating to the establishment of Gate #5 as a primary gateway. Additional open space is provided in the corridor between Seventh and Eighth streets. This open space section is intended to link the open space on the north side of the DFC with the open space on the south side. It also serves as a separator between the central core of the DFC and the new development areas. Concept A provides the least amount of land area for future growth and the greatest amount of open space, as compared to the other site development concepts. The major features of Concept A are illustrated on Figure 3.

2.1.2 Site Development Concept B: North-South Arterial Alternative

The main portals in Concept B are located at Gates #1 and #4, with a major arterial following a diagonal alignment across the DFC. A secondary portal is located at Gate #2, and Gate #5 could also be considered a secondary portal in this concept. First Street at Gate #2 would be considered an important orientation point, leading the driver to the main arterial of the site. Activity nodes are suggested at the intersection of Third Street and Center Avenue where pedestrian activity would occur at a central location. An additional activity node is identified on the south side of Main Avenue between Third and Fourth Streets. This node would reinforce the formal entry that already exists at this location. On a conceptual level, future growth is located along the south side of the main arterial. The major features of Concept B are illustrated on Figure 4. A number of natural features and

Figure 4: Site Development Concept B Map



drainageways occur along this arterial that would have to be incorporated into the final development plan. Open space is provided along the perimeter of the DFC. This site development concept may present potential problems with security requirements at the DFC.

2.1.3 Site Development Concept C: Circular Arterial Alternative

Concept C suggests a realignment of the Gate #1 main portal to better handle traffic congestion problems and entry stacking of vehicles for security clearance. A secondary portal is identified at Gate #2. The intersection at Gate #2 is signalized for the stadium activities that occur on the east side of Kipling Street. For this reason, this location is a likely entry point for the site, even on a limited basis as defined in this concept. Gate #4 is identified as a secondary portal that would be highly controlled for buses and service vehicles. This would be necessary to promote the use of Gate #5 as a primary access point. The transportation system circulates around the central core areas defined by Seventh Street on the west side of the DFC, North Avenue on the north, Third Street on the east, and Main Street on the south. Secondary roadways connect to the main circle in a "wagon wheel" configuration.

Future growth areas are located on the west side of the DFC with main access via Center Avenue and Gate #5. A visitor zone is established along the south side of the property and provides access from Alameda Avenue. A secondary roadway connection is proposed to connect Seventh and Carpenter streets to facilitate easy access by visitors to the USGS map sales office in Building #810. Open space is provided around the perimeter of the DFC on the north and east sides, connected via the Agriculture Ditch along Third Street. An open space buffer is also shown along McIntyre Gulch and the southeastern portion of the Agriculture Ditch. This configuration offers a more connected open space system and the greatest growth potential. The major features of Concept C are illustrated on Figure 5.

2.2 Alternatives Evaluated

The two alternatives evaluated in this EIS are the Proposed Action alternative (implementation of the master site plan) and the No-Action alternative.

2.2.1 Proposed Action: Implementation of the Master Site Plan

The proposed master site plan was developed based on the composite evaluations of the three original alternative site development plans (Concepts A, B, and C) by GSA officials, PAC members, the planning consultant team, DFC tenants, and public meeting input. The plan provides a framework for land uses, potential development, circulation, and open space. The major features of the proposed master site plan are illustrated on Figure 6. Under the proposed master site plan, the main transportation arterial would be oriented in an east-west direction across the DFC. The main portals to the site would be through Gate #5 on the west and Gate #1 on the east. The Gate #1 portal, however, would be realigned further north on Kipling Street, to a location just south of Downing Reservoir to minimize potential traffic impacts on Alameda Avenue. Secondary portals would be maintained under this site development plan at Gates #2, #4, and #7.

Figure 5: Site Development Concept C Map

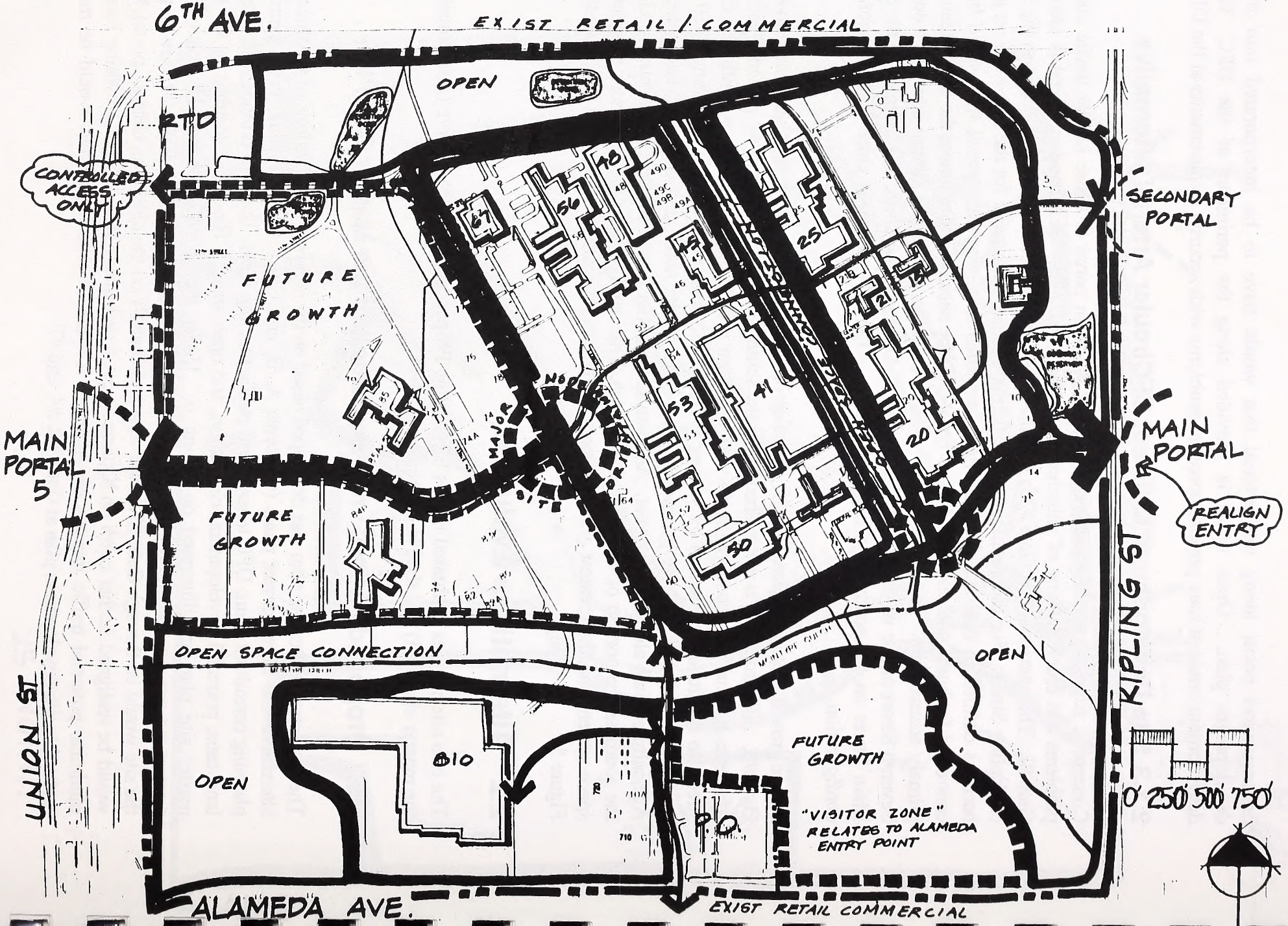


Figure 6: Proposed Master Site Plan



Potential expansion of facilities at the DFC would occur in three development stages. Development during Stage I would occur only within specified undeveloped portions of the central core area of the DFC. The existing central core area consists of approximately 166.5 acres, all of which have been developed with a variety of buildings, parking lots, storage yards, and landscaped/recreation spaces. Eight potential infill areas (totaling 18.5 acres) have been identified in the central core area. These areas should be considered as priority new construction sites for compatible development, due to their proximity to existing services and infrastructure. Future development at the DFC would occur in perimeter development areas outside of the central core area. These areas are identified as Stage II. and Stage III development districts. These areas are characterized by large, open lands that could be developed without adversely affecting essential open space or the more dense central core area. Some of the Stage II and Stage III development parcels potentially have suspected levels of site contamination that would require further investigation and possible remediation before development could occur.

Stage II development district parcels are located immediately adjacent to the central core area and are more easily developed due to their proximity to existing roadways and utility systems. Stage III development district parcels are farther away from the central core area, and should be considered a lower priority for new development due to the cost of infrastructure extensions, potential for contamination, or adjacency to important open space areas. Under the moderate growth scenario, it is assumed that 75 percent of the projected growth would occur in the Stage I development district. During the life of the proposed plan, growth outside the core area would be limited to mixed-use development within the Stage II district. Stage III districts are designated as the least dense development area and are recommended as the last priority for locating development projects. It is assumed that development within the Stage III development district would not occur during the life of the proposed plan. Special use districts provide areas for existing and proposed long-term lease and permit development options primarily under unique lease agreements.

Open space under this site development plan would occur along the southwest and southeast corners of the site, McIntyre Gulch, the Agricultural Ditch, and much of the eastern and northern site boundaries. The Open Space District is an interconnected system of undeveloped parcels that constitutes almost 40 percent of the total area of the DFC.

As part of the master site planning process, a model was developed to calculate parking and transportation needs, and to formulate a basis for future development standards at the DFC. This process included an analysis of existing densities at the DFC and a comparison of these densities to general industry standards. The following factors were applied to calculate potential future density at the DFC. These factors were derived from industry statistics provided by the International Facilities Management Association (IFMA) for functions similar to those on the DFC.

Stage I development district floor area ratio (FAR) of .45
Stage II development district far of .20
Stage III development district far of .10

For estimating purposes, the average population in the central core area is assumed to be 500 gross square feet (gsf)/person, 650 gsf/person in the Stage II area, and 1,500 gsf/person in the Stage III area. The result of this analysis are shown in Table 1.

Table 1: DFC Master Site Plan Growth Projections

	Existing Conditions	Master Site Plan Period	Potential Build-Out
Stage I			
gross square feet	2,893,750	3,184,731 total (290,981 additional)	3,513,451 total (328,720 additional)
IFMA* Personnel Capacity	4,057 (4,265 actual level)	4,847 total (582 additional)	5,504 total (657 additional)
Stage II			
gross square feet	1,041,922	1,168,014 total (126,092 additional)	1,469,535 total (301,521 additional)
IFMA Personnel Capacity	763 (908 actual level)	1,102 (194 additional)	1,566 total (464 additional)
Stage III			
gross square feet	116,955	116,955 total (0 additional)	511,263 total (394,328 additional)
IFMA Personnel Capacity	62 (0 actual level)	62 (0 additional)	263 total (263 additional)
Entire DFC			
gross square feet	4,052,627	4,469,700 total (417,073 additional)	5,494,269 total (1,441,642 additional)
IFMA Personnel Capacity	4,882 (5,173 actual level)	5,949 total (776 additional)	7,333 total (2,160 additional)

* IFMA = International Facilities Management Association
Source: General Services Administration, *Draft Master Site Plan*, 1996.

Levels of Use. The proposed master site plan was designed to have the flexibility to accommodate and adjust to a range of possible future scenarios relating to intensity of use of the DFC property and assets. These possible scenarios have been generalized into three different level-of-use categories that represent the most likely outcomes of future conditions: Status Quo; the Contracted Use of the DFC; and Moderate Growth of the DFC. For the environmental analysis of this document (see Section 4) it is assumed that the potential for impacts from the Proposed Action is greatest under the Moderate Growth scenario as compared to the status quo or contracted level-of-use scenarios.

Status Quo Scenario: The status quo scenario suggests that the current level-of-use and character of the DFC would remain the same as present conditions. The potential for new building construction and comprehensive site improvement projects would be very limited. Building rehabilitation and site-related facility projects would continue to occur on an incremental basis, as driven by tenant needs, facility maintenance programs, and the Federal budgetary planning process. Employment at the DFC would likely remain stable, as would utilization of off-site leased space. There would be very limited opportunities for non-Federal development on the DFC.

Contracted Use Scenario: Under this scenario, there would likely be a reduction in funds available for site improvements and building rehabilitation projects as overall demand for space declines. Decreased funding would result in further building deterioration, and the eventual decline in existing building use. Employment at the DFC may drop in the longer term as overall demand declines, but occupancy would not likely be affected in the short term due to the backfill of vacant space with tenants now in off-site leased space. As a result, demand for off-site leased space may decrease in the short term, at least until the deterioration of the DFC buildings reaches a level that forces tenants off-site. Under this scenario, there may be an opportunity for non-Federal use of the DFC facilities.

Moderate Growth Scenario: The moderate growth scenario suggests an increase in funding availability and demand for space at the DFC. Projects for new building construction, building renovation, and site improvement would have greater opportunity for approval. A general increase of DFC personnel would necessitate increasing projects under this growth scenario. Non-government development opportunities and possible joint-venture building projects would be considered under this scenario in the longer term. For planning purposes, moderate growth over the time horizon of the proposed plan is considered to be growth in total employment of 15 percent from December 31, 1995 levels, over a 20 year period.

2.2.2 No-Action Alternative

The No-Action alternative is defined as a continuation of operations at the DFC under the prevailing conditions as of mid-year 1996. The proposed master site plan would not be implemented and management/development decisions for the DFC would continue under existing policies and plans. Improvements to existing buildings and some new construction under this scenario could still occur; however, the level of investment may be less than in the past, depending on the tenant/vacancy situation and possible Federal government imposed budget-related constraints.

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Section 3: Affected Environment

3.0 Affected Environment

The implementation of the Proposed Action has the potential to affect various environmental resources within the DFC property, as well as the potential to affect certain resources beyond the boundaries of the DFC. This section of the document examines specific environmental resources that have the potential to be affected through the implementation of the Proposed Action. This section is organized into the following subsections: Physical Environment; Biological Resources; Cultural Resources; Socioeconomic Factors and Infrastructure; and Transportation and Traffic. Within each of these subsections, the potentially affected environmental resources are described and assessed. A region of influence (ROI) is defined for each of the evaluated resources, which identifies the geographic area where each resource is considered to have the potential to be affected through the implementation of the Proposed Action. Each resource description focuses on the relevant attributes and characteristics of that resource with the potential to be affected by the Proposed Action, or that represent potential encumbrances to the Proposed Action. The identified potential development encumbrances/use limitations are described in greater detail at the end of this section.

3.1 Physical Environment

The physical environment resources at the DFC evaluated in this subsection include topography, soils, hydrology and water quality, air quality, and noise.

3.1.1 Topography

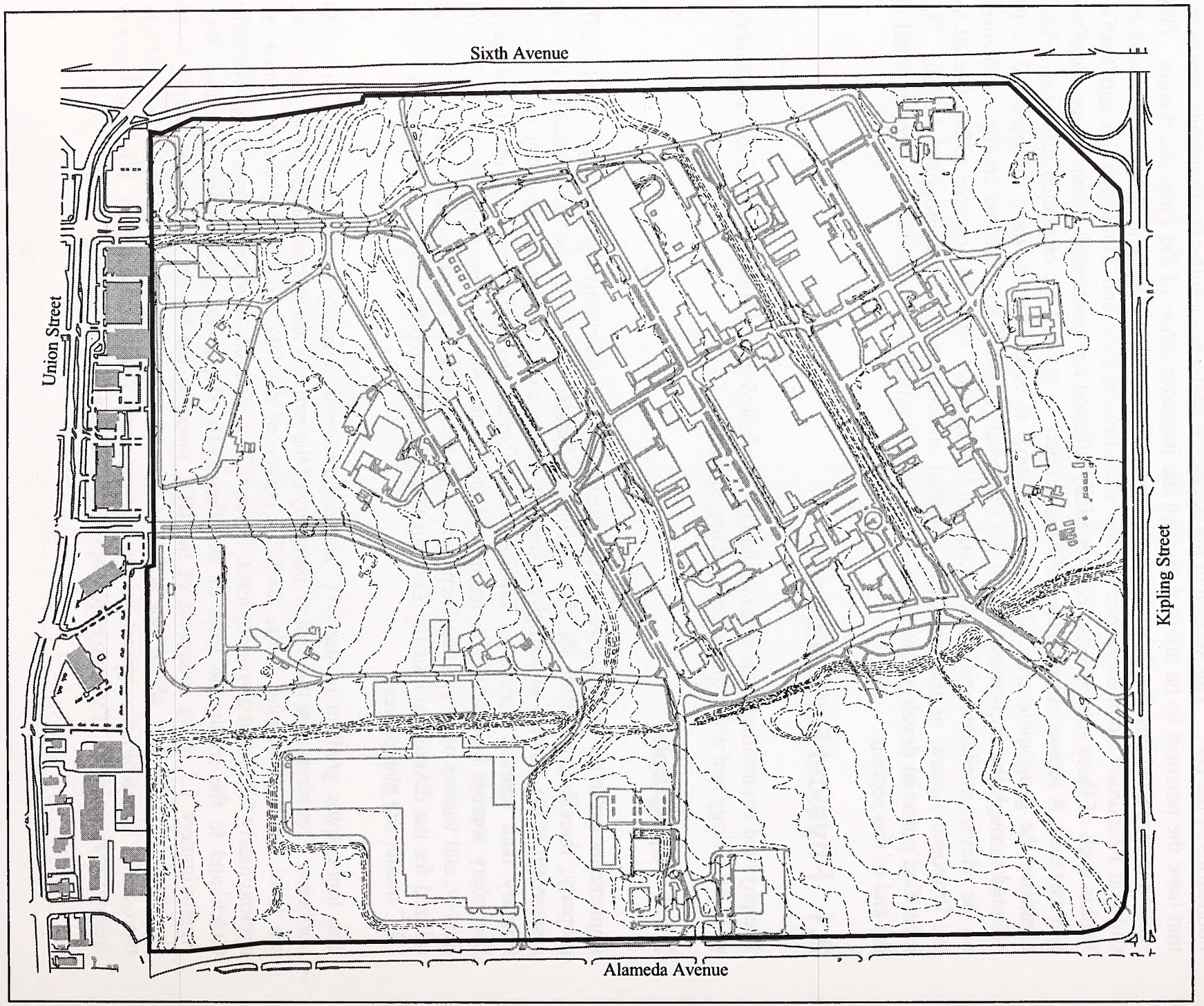
Implementation of the Proposed Action has the potential to affect only the topography on the DFC property; therefore, the ROI for this resource is limited to within the DFC boundaries. The assessment of the existing topography at the DFC is based on primary and secondary data sources. Primary data sources consist of on-site reconnaissance to gather and confirm information. Secondary sources include USGS topographic maps, the Soil Conservation Service (SCS) Soil Survey, and various other existing documents, reports, and maps. Primary and secondary data was utilized for the development of the *Existing Site Conditions* report, which is a component of the DFC master site plan process.

The topographic gradient of the DFC slopes downward generally from west-southwest to the northeast. Elevations near the western boundary of the property are approximately 5,680 feet above sea level, while elevations in the northeast corner of the DFC and near McIntyre Gulch are approximately 5,550 feet above sea level. Except for some areas of steeper slopes along McIntyre Gulch and to the south and west of Building #810, slopes are gentle throughout the DFC. Approximately 1.5 miles southwest of the DFC property, the terrain rises more steeply to an elevation of 6,855 feet above sea level. Other areas surrounding the DFC exhibit rolling topographic characteristics typical for the near-mountain Great Plains region (General Services Administration, 1979). The topography of the DFC is depicted on Figure 7.

Topographic Features of the DFC

Figure 7

Contour Interval
5 Feet



3.1.2 Soils

Implementation of the Proposed Action has the potential to affect only the soils on the DFC property; therefore, the ROI for this resource is limited to within the DFC boundaries. The assessment of existing soil resources at the DFC is based on secondary data sources. The secondary sources include the SCS Soil Survey and other existing documents and reports. Secondary data was utilized for the development of the *Existing Site Conditions* report, which is a component of the DFC master site plan process.

The soils at the DFC are classified as consisting of the "Nunn-Denver" soil association according to the 1980 *Soil Survey of Golden Area, Colorado*, issued by the U.S. Department of Agriculture's (USDA) SCS (now called the Natural Resources Conservation Service (NRCS)). The Soil Survey describes this general soil map unit as occurring:

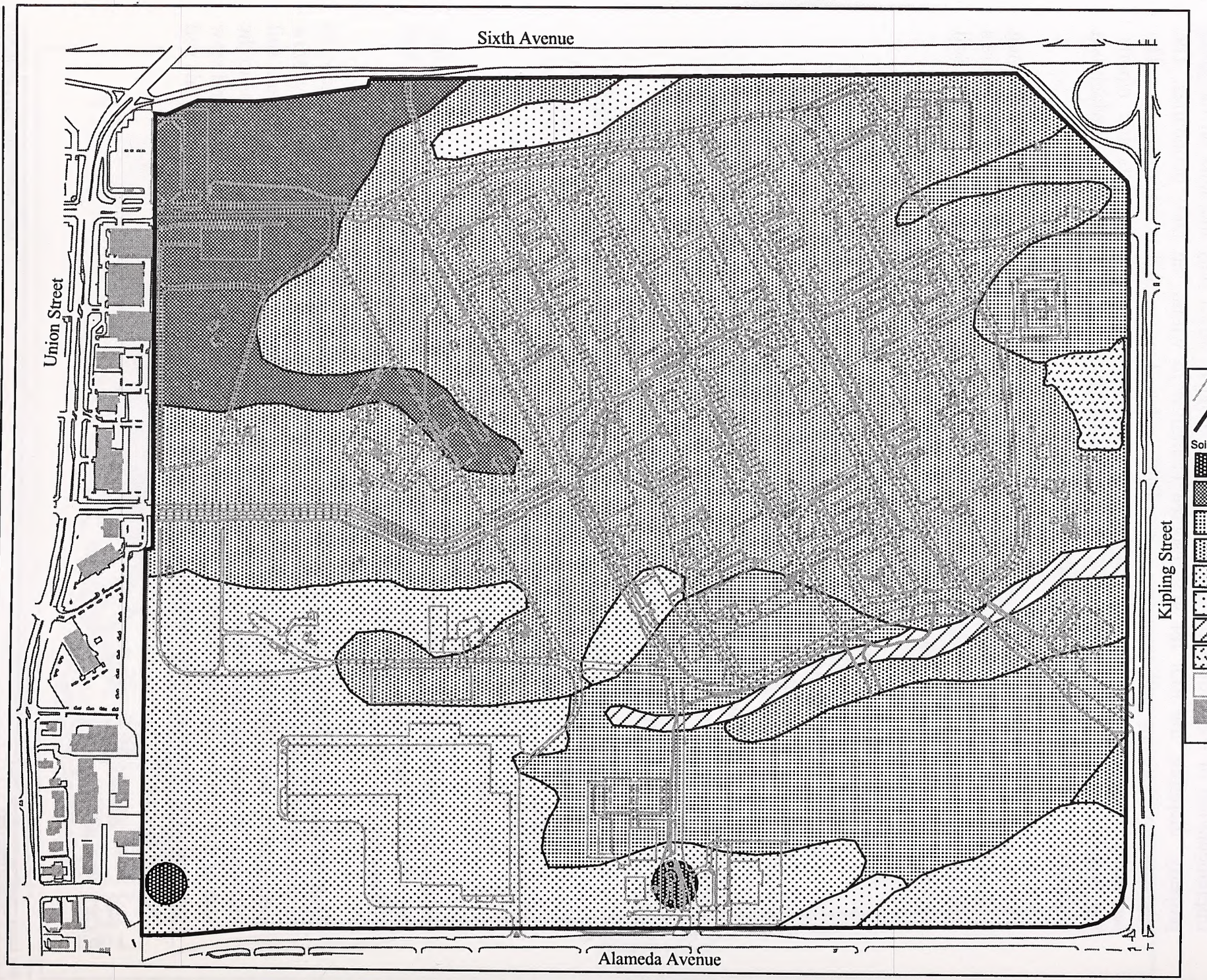
> ...mainly on high terraces and fans. Slope is 0 to 5 percent. The vegetation is mainly grasses and forbs. Elevation is 5,200 to 6,500 feet. ...It is about 45 percent Nunn soils and similar soils and 25 percent Denver soils and similar soils. The remaining 30 percent is soils of minor extent and Urban land.
>
> Nunn soils are on high terraces and fans. These soils are deep and well drained. They formed in clayey material derived dominantly from mudstone and shale. The surface layer is clay loam. The subsoil is clay and clay loam. Below the subsoil to a depth of 60 inches the material is clay loam.
>
> Denver soils are on high terraces and fans. These soils are deep and well drained. They formed in clayey material derived dominantly from mudstones and shale. The surface layer is clay loam. The subsoil is clay to depth of 60 inches. ...The soils in this map unit are used mainly for community development, as pasture, and for crops. They are also used for grazing (USDA, 1980).

In addition, the Soil Survey identified seven detailed soil map units that occur within the DFC boundaries. These soil map units are located within the DFC as depicted on Figure 8. The Soil Survey provides the following description for each of these soil types:

Denver clay loam, 2 to 5 percent slopes. This soil unit is described as a deep, well-drained soil occurring on high terraces, hill slopes, and fans. This soil unit is characterized by slow permeability and a high available water capacity. Runoff is medium. Water erosion and soil blowing are moderate hazards and the shrink-swell potential is high. The main limitations to the use of this soil for homesite developments are the shrink-swell potential, low strength, and slow permeability. Special sewage systems must be installed due to the slow permeability of this soil unit (USDA, 1980).

Soil Units at the DFC

Figure 8



Denver-Kutch-Urban land complex, 5 to 9 percent slopes. This soil unit is described as occurring on hill slopes and shoulders. Denver soils comprise approximately 40 percent of this soil complex, while the Kutch soil makes up approximately 25 percent and Urban soils account for roughly 20 percent. The Denver soil is a deep, well-drained soil. Permeability of the Denver soil is slow, and the available water capacity is high. Runoff is described as medium and water erosion and soil erosion are considered moderate hazards. The shrink-swell potential is described as high. The Kutch soil is described as moderately deep and well-drained. Permeability of the Kutch soil is described as slow, and the available water capacity is low. Runoff is medium, and water erosion is a moderate hazard. Soil blowing is considered a slight hazard, and the shrink-swell potential is high. Urban land is mainly covered by streets, parking lots, sidewalks, buildings, and other artificial impervious structures. Because Urban land is very slowly permeable or is impermeable, runoff is described as rapid (USDA, 1980).

The establishment and maintenance of vegetation in this soil unit is restricted by the clay loam surface layer and clayey subsoil. The main limitations for use of this soil type for homesite development are the shrink-swell potential, depth to rock, low strength, and slow permeability (USDA, 1980).

Denver-Urban land complex, 0 to 2 percent slopes. This soil complex is described as occurring on high terraces, tablelands, and fans. Denver soil makes up approximately 65 percent of this complex and Urban lands comprise roughly 20 percent. In most places, the areas of this complex are used for community development. In a few places, the Denver soil is used as pasture and for grazing. The establishment and maintenance of vegetation in this soil unit is restricted by the clay loam surface layer and clayey subsoil. The main limitations for use of this soil type for homesite development are the shrink-swell potential, low strength, and slow permeability (SCS, 1980).

In addition, this soil complex may contain inclusions of Nunn Typic Haplaquails, which are designated as hydric soils in the Golden area by the NRCS in the Comprehensive Hydric Soils List. The local landforms in which these hydric soil inclusions occur are low terraces and they are listed as satisfying the saturation and ponding criteria for hydric soils. Specifically, these inclusions have a water table at less than or equal to 1.0 foot from the surface during the growing season if permeability is less than 6.0 inches/hour in any layer within 20 inches and/or they are frequently ponded for long or very long durations during the growing season (NRCS, 1995).

Denver-Urban land complex, 2 to 5 percent slopes. This soil complex is described similarly to the Denver-Urban land (0 to 2 percent slopes) complex described above (USDA, 1980). In addition, this soil complex contains inclusions of Aquic Haplustolls, which are designated as hydric soils in the Golden area by the NRCS in the Comprehensive Hydric Soils List. The local landforms in which these hydric soil inclusions occur are swales, and are listed as satisfying the saturation and ponding criteria for hydric soils. Specifically, these inclusions have a water table at less than or equal to 1.0 feet from the surface during the growing season if permeability is less than 6.0 inch/hour in any layer within 20 inch, and/or they are frequently ponded for long or very long durations during the growing season (NRCS, 1995).

Denver-Urban land complex, 5 to 9 percent slopes. This soil complex is described similarly to the Denver-Urban land (0 to 2 percent slopes) complex described above (USDA, 1980)

Englewood-Urban land complex, 0 to 2 percent slopes. This soil complex is described as occurring on alluvial fans and in drainageways. This complex is approximately 65 percent Englewood soil and 20 percent Urban land. The Englewood soil is deep and well-drained. Permeability of the Englewood soil is described as slow, and the available water capacity is high. Runoff is described as slow, water erosion is a slight hazard, soil blowing is a moderate hazard, and the shrink-swell potential is high. Most areas of this complex are used for community development. In some areas, Englewood soil is used as pasture and for grazing. The establishment and maintenance of vegetation in this soil unit is restricted by the clay loam surface layer and clay subsoil. The main limitations for use of this soil type for homesite development are the shrink-swell potential, low strength, and slow permeability (USDA, 1980).

In addition, this soil complex contains inclusions of Typic Haplaquails, which are designated as hydric soils in the Golden area by the NRCS in the Comprehensive Hydric Soils List. The local landforms in which these hydric soil inclusions occur are low terraces, and they are listed as satisfying the saturation criteria for hydric soils. Specifically, these inclusions have a water table at less than or equal to 1.0 feet from the surface during the growing season if permeability is less than 6.0 inch/hour in any layer within 20 inches (NRCS, 1995).

Ustic Torriothents, loamy, 15 to 50 percent slopes. This soil complex is described as shallow to deep, well-drained soils on eroded, active hill slopes adjacent to drainageways. The soils formed in loamy material that eroded from interbedded sandstone and shale. This complex is highly variable in depth to bedrock, color, and thickness of soil layers. This complex is commonly found as a clay loam, loam, or sandy clay loam. Permeability of Ustic Torriothents, loamy is described as moderate to slow, and the available water capacity is low to high. Runoff is rapid, and water erosion is a severe hazard. Soil blowing is a moderate to severe hazard, and the shrink-swell potential is moderate to high. In most places these soils are used for grazing and as habitat for wildlife. The establishment and maintenance of vegetation in this soil unit is difficult due to the slope, and in some areas, because of the clayey texture and depth to rock. The main limitations for use of this soil type for homesite development are the slope, depth to rock, and slippage (USDA, 1980).

In addition to potential development constraints relating to soil unit characteristics and limitations, there is also the potential that contamination may exist within the soil of certain areas of the DFC that could affect future development decisions. As further described in Section 3.4.6 (Land Use), various spills and releases of hazardous materials into the soils at the DFC are known or suspected to have occurred since 1941. Although all of the locations and types of contamination are not completely known at this time, certain areas of the DFC have been identified as possessing potential contamination encumbrances, pending further site characterization.

3.1.3 Hydrology and Water Quality

Implementation of the Proposed Action has the potential to affect water resources within the DFC as well as areas hydrologically connected (surface and/or groundwater) to the DFC. The ROI for this resource includes the DFC property, the off-site downstream portion of McIntyre Gulch (until its confluence with the South Platte River), the off-site downstream portion of the Agricultural Ditch (until Wolcott Lake), and areas within four miles of the DFC boundary for groundwater migration (this radius may be expanded if impacts beyond a four-mile radius can be demonstrated). The assessment of existing hydrological resources at the DFC and water quality is based on primary and secondary data sources. Primary sources include on-site reconnaissance to gather and confirm information and to collect surface water samples for water quality analysis. Secondary sources include various documents, reports, maps, and aerial photographs. Primary and secondary data was utilized for the development of the *Existing Site Conditions* report, which is a component of the DFC master site plan process. Applicable regulatory references for this resource include: Executive Order 11988 - Floodplain Management; and C.R.S. Section 25-8-101 through 703; Clean Water Act (CWA); Federal Water Pollution Control Act (FWPCA); Resource Conservation and Recovery Act (RCRA); and the Safe Drinking Water Act (SDWA).

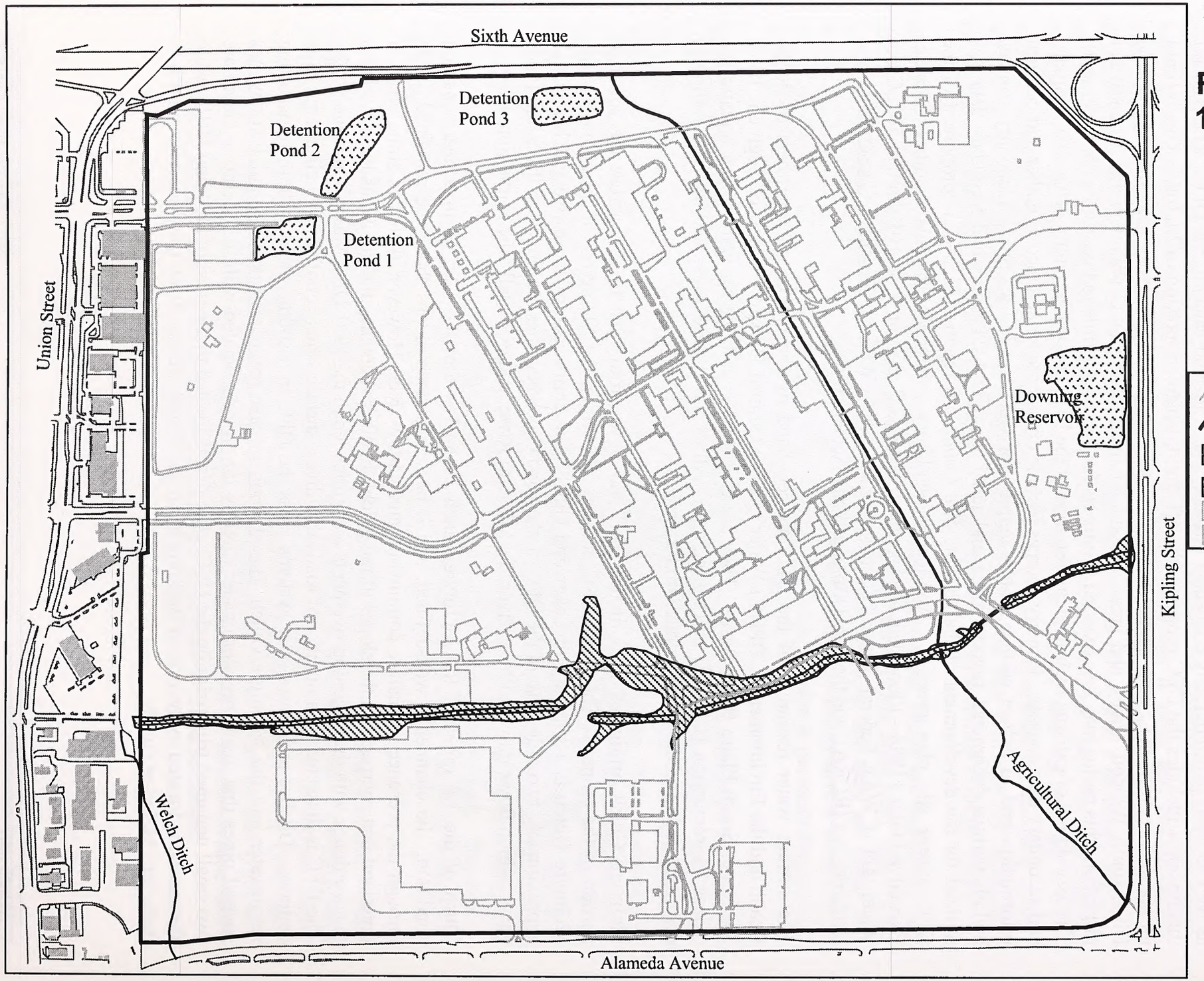
The surface water resources of the DFC are regulated by the Colorado Department of Public Health and the Environment (CDPHE) Water Quality Control Division as part of Segment 16 of the Upper South Platte River Basin. They are classified as suitable for warm water aquatic life (Class 2), recreation (Class 2) and agriculture. All of the surface water and wetland resources described in this section are illustrated on Figure 9.

McIntyre Gulch originates west of the DFC and flows from west to east across the southern portion of the property. The entire DFC property lies within the McIntyre Gulch drainage basin. McIntyre Gulch is a tributary to Lakewood Gulch. The confluence of these two gulches occurs approximately two miles east of the DFC. Lakewood Gulch becomes a tributary to the South Platte River, which flows into the Platte River, the Missouri River, and eventually the Mississippi River.

Much of the 1.4 miles of the McIntyre Gulch channel within the DFC is in a nearly natural condition. Its channel is well-defined, and it possesses steep slopes that have remained stable through the presence of mature cottonwood and willow trees. However, there are some areas of grassland that encroach on the slopes of the gulch. In other segments, the gulch has been modified in accordance with drainage improvements recommended in the 1991 DFC Master Drainage Study. The DFC is dissected by a number of roads that divert surface water runoff from their natural flow patterns. Ditches and stormwater systems cross the DFC in a southeasterly pattern transporting stormwater into the McIntyre Gulch. Based upon on-site reconnaissance, the gulch today has several pipes that discharge stormwater directly into it. Associated with the McIntyre Gulch are two small unnamed tributaries on the DFC. The first is located to the west of Building #810, while the second is located to the east of Building #810 and Eighth Street. Both tributaries flow north to drain into McIntyre Gulch.

Surface Water and Wetland Resources, and 100-year Flood Plain Areas of the DFC

Figure 9



There are two constructed irrigation canals at the DFC: Welch Ditch and Agricultural Ditch. Welch Ditch draws water from Clear Creek in the canyon above the first tunnel west of Golden, an area north and west of the DFC. It flows along the western border of the DFC and enters the DFC in the southwest corner. Welch Ditch does not intercept any storm flows on the DFC and is often dry. It crosses a short distance of the DFC's southwest corner, and then travels south discharging into Smith Reservoir and then Kendrick Reservoir, approximately two miles to the south of the DFC. The Kendrick Reservoir empties into the Sanderson Gulch and flows east to the South Platte River.

The Agricultural Ditch serves as a diversion for some local storm flows on the DFC (Master Drainage Study, 1991). The Agricultural Ditch diverts surface water from Clear Creek near the Ford Street bridge in Golden. The Agricultural Ditch enters the DFC on the north side of the property about halfway between Kipling Street and Union Boulevard. It flows generally to the southeast from the DFC through residential areas, eventually reaching Wolcott Lake near the Teikyo Loretto Heights University campus just east of Sheridan Boulevard and Evans Avenue, a distance of approximately eight miles.

One permanent surface water impoundment exists at the DFC. This water retention area is known as Downing Reservoir. It is approximately a 4.25-acre reservoir, estimated to average about six feet deep. It is located adjacent to Kipling Street, along the eastern boundary of the DFC property. Reservoir influent consists of cooling water, spring water, and stormwater. Downing Reservoir is also suspected of being replenished by groundwater. A minimal amount of stormwater from the DFC discharges into the reservoir; however, the stormwater system can be diverted to provide additional flow. During the DOP operations, treated effluent was discharged into the reservoir from the Industrial Waste Disposal Plant. A construction debris dump is located on the western boundary (General Services Administration, QuantaLex Data Review Report, December 1995). The reservoir may also have been potentially impacted by leachate from two leach fields located directly south and southwest of the reservoir. Water from the reservoir exits from the outlet headgate, through a 12-inch clay pipe that passes under Kipling Street, and discharges into a small ditch. The discharge flows north of a nearby school and eventually enters the South Platte River about seven miles to the east. The reservoir has also been used as a wildlife research site by the U.S. Fish and Wildlife Service (USFWS). It is possible that the southern end of the reservoir may come in contact with the uppermost aquifer (General Services Administration, QuantaLex Data Review Report, December 1995).

A constructed floodway composed of three small non-permanent detention basins is located on the north side of the DFC. These detention basins are designed to intercept stormwater from the west of the DFC and direct the flows from the westernmost basin (also called detention pond #1) to the center basin (detention pond #2), and finally to the easternmost basin (detention pond #3). Releases of the stormwater are due to percolation through the bottom of the detention ponds and, if necessary, through an overflow gate in detention pond #3 that drains directly into the Agricultural Ditch (Wilson and Company, Master Drainage Study, Denver Federal Center Roads and Grounds Project, January 1991). With the exception of detention pond #3, these basins are generally dry. Detention pond #3 has an outflow shut-off valve that is currently regulated by the owners of the ditch, the Agricultural Ditch and Reservoir Company. The DFC is allowed to drain accumulated

water from the pond into the ditch at such times as ditch capacity is able to convey it and permission is obtained, in advance, from the Agricultural Ditch and Reservoir Company to make such a release (Al Green, 1996). Typically, the water level in detention pond #3 is shallow; however, it is designed to store water up to 9.5 feet before flowing over the emergency spillway (Master Drainage Study, 1991).

Water quality in all of the DFC's surface water resources has the potential to have been degraded through exposure to hazardous substances on the DFC. Because of the lack of any dilution capacity, releases of contamination into minimal flowing water courses can have significant effects on aquatic life and other uses, such as ingestion by livestock. As described in Section 3.6, there are numerous suspected sources of contamination on the DFC installation. No on-going surface water quality monitoring operations have been conducted at the DFC in recent years to provide consistent information about current surface water quality conditions.

There are no surface water drinking intakes within 15 miles downstream of the DFC. Fisheries that are suspected of being used for human consumption include Wolcott Lake, Smith Reservoir, Kendrick Reservoir, and the South Platte River. During the operation of the DOP, the fisheries in Wolcott Lake were probably exposed to some contamination when industrial effluent was directly discharged into the Agricultural Ditch (General Services Administration, *Draft Preliminary Assessment, Denver Federal Center*, 1996).

Water quality data was collected from four surface water resources at the DFC on July 18, 1996: the Agricultural Ditch (taken near McIntyre Gulch crossing); McIntyre Gulch (taken near Agricultural Ditch crossing); Downing Reservoir (taken near west side); and Detention Pond #3 (taken near east side). The results of the laboratory analysis are presented in Table 2.

Based on the results of the water quality test, the existing water quality is considered generally representative of an urbanized area. Most of the samples have concentrations that are well within expected limits, with the following exceptions:

- Total cyanide is elevated in all four samples;
- Sulfate, hardness and calcium are elevated in Detention Pond #3;
- Manganese is elevated in Agricultural Ditch and Downing Reservoir; and
- Selenium is elevated in McIntyre Gulch and Detention Pond #3.

Depth to groundwater in the upper unconfined alluvial aquifer at the DFC averages about 17 feet. Depth to bedrock (the Denver Formation) averages about 25 feet. A confined bedrock aquifer is located approximately 35 feet below the ground surface. There does not appear to be any interaction between the bedrock aquifer and the upper alluvial aquifer The DFC is overlain with a mixture of compacted fill and topsoil over a clay to sandy-clay mixture of soil types, and generally has low permeability. Lens of more highly permeable material occur throughout the site. Groundwater flow is generally from west to east. Seeps and springs occur in the southwest areas of the site near Building #810. Depth to bedrock in the southwest corner of the DFC was encountered at nine feet in a soil boring conducted in 1995. No groundwater was encountered in this boring (General Services Administration, *Draft Preliminary Assessment, Denver Federal Center*, 1996).

Table 2: Water Quality Testing Results for Surface Water Resources at the DFC

Parameter	Agricultural Ditch	McIntyre Gulch	Downing Reservoir	Detention Pond #3	Stream Standard****
General Parameters					
Specific Conductance, umhos/cm*	113	1210	704	725	NS*****
Alkalinity, mg $CaCO_3$/l**	25.7	297	138	62.4	NS
Carbonate, mg $CaCO_3$/l	0	0	42.6	34.8	NS
Bicarbonate, mg $CaCO_3$/l	25.7	297	95.2	27.6	NS
Total Cyanide, mg/l***	0.01	0.01	0.01	0.01	0.2
Ammonia-N, mg/l	<0.80	<0.08	<0.80	<0.08	0.06
Nitrite-N, mg/l	<0.076	<0.076	<0.076	<0.076	10
Nitrate-N, mg/l	0.15	0.13	0.14	2.8	100
Ortho-Phosphate, mg/l	<0.25	<0.25	<0.25	<0.25	NS
Sulfate, mg/l	21.3	110	110	280	250
Total Metal					
Arsenic, mg/l	<0.0010	<0.0010	<0.0010	<0.0010	0.1
Selenium, mg/l	<0.0011	0.0044	<0.0011	0.003	0.005
Iron, mg/l	0.37	<0.0081	0.66	0.18	**1.0**
Manganese, mg/l	0.037	<0.0081	0.044	<0.0081	0.2
Sodium, mg/l	6.7	101	111	116	NS
Potassium, mg/l	0.91	1.3	3.9	1.7	NS
Calcium, mg/l	9.5	16.9	23.6	136	NS
Magnesium, mg/l	2.4	11.9	9.0	22.4	NS
Boron, mg/l	<0.044	0.14	0.13	0.11	0.75
Phosphorus, mg/l	<0.37	<0.37	<0.37	<0.37	NS
Mercury, mg/l	<0.0002	<0.0002	<0.0002	<0.0002	0.00001
Hardness, mg/l	33.8	91.1	96.1	431	NS
Dissolved Metals					
Aluminum, mg/l	<0.12	<0.12	<0.12	<0.12	0.87
Cadmium, mg/l	0.0002	<0.0001	<0.0001	<0.0001	0.01
Copper, mg/l	0.0074	<0.0032	0.0059	<0.0032	0.01
Lead, mg/l	<0.0023	<0.0023	<0.0023	<0.0023	0.003
Nickel, mg/l	<0.078	<0.078	<0.078	<0.078	0.84
Silver, mg/l	<0.0056	<0.0056	<0.0056	<0.0056	0.0002
Zinc, mg/l	0.099	<0.051	<0.051	<0.051	0.098
Molybdenum, mg/l	<0.025	<0.025	<0.025	<0.025	NS

*umhos/cm = electrical resistance per centimeter

**mg $CaCO_3$/l = milligrams of calcium carbonate per liter

***mg/l = milligrams per liter

****Metal Standards are based upon a hardness of 90 mg/l

*****NS = No Standard

Source: Cenibark International, August 1997, and Louis Berger and Associates, Inc., August 1996.

The shallow groundwater is potentially used for both domestic and irrigation purposes. Use has been documented to the east of the DFC as part of a RCRA corrective action project conducted by the FHWA to document and correct groundwater contamination from leaking on-site underground storage tanks (USTs) (see Section 3.4.6 of this document for detailed information). These wells are

between 1/2 mile and 1 mile east of the DFC. The vast majority of homes and businesses in this area are on a municipal water supply system that is supplied by surface water that originates outside of the DFC drainage basin. No use of the near surface aquifer by municipal systems is known. One emergency drinking well does exist at the DFC, near Building #810. This well penetrates the Denver Formation and has a depth of about 600 feet. Water testing indicates that this well has bacterial contamination and the water should be boiled or disinfected prior to consumption. The source of this contamination is unknown (General Services Administration, *Draft Preliminary Assessment, Denver Federal Center*, 1996).

Wellhead Protection Areas are the surface and subsurface areas surrounding a water well or well field, supplying a public water system, through which contaminants are reasonably likely to move towards and reach such water well or well fields. There are no Wellhead Protection Areas known to exist within four miles of the DFC (General Services Administration, *Draft Preliminary Assessment, Denver Federal Center*, 1996).

A portion of the groundwater at and adjacent to the DFC is known to be contaminated by tricholorethane (TCA), tricholoroethylene (TCE), and cis-1,2-dichloroethene (DCE). Based upon a limited number of groundwater samples, other types of potential contamination may include: heavy metals, manganese, cyanide, volatile organics, hydrocarbons, solvents, pesticides, and nitrates (General Services Administration, *Draft Preliminary Assessment, Denver Federal Center*, 1996).

Flood hazard areas associated with McIntyre Gulch, including areas within the DFC, were delineated as part of a 1977 study. The portion of McIntyre Gulch that passes through the DFC was described in this report as consisting of a deeply incised trapezoidal shaped-channel with minor meandering and an average slope of 1.9 percent. Within this segment of the gulch, the floodplain is generally contained within the channel during high velocity flows. However, several areas along this segment were identified to be potentially subject to shallow flooding from 10- and 100-year floods. These flood hazard areas are located within the DFC as depicted on Figure 9. The 100-year floodplain overlaps sections of Kipling Street, Pierson Road, Main Street, Sixth Street, and Seventh Street. Further, the 1977 study describes the McIntyre Gulch channel as having the capacity to subject portions of the Agricultural Ditch, Seventh Avenue, and Pierson Street to a 10-year flood. The potential flood hazards identified in these areas include erosion, interrupted traffic and services, and damage to the Agricultural Ditch.

Flood Insurance Rate Maps, prepared by FEMA for the National Flood Insurance Program in 1989, do not include the Federal property occupied by the DFC.

3.1.4 Air Quality

Implementation of the Proposed Action has the potential to include construction, demolition, and operational activities that may affect air quality within the DFC and adjacent areas, as well as regional air quality through changes in transportation patterns and volume. The ROI for this resource includes the Denver Metropolitan/Central Front Range Air Quality Control Region (Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, Gilpin, and Jefferson counties). The assessment of existing and anticipated air quality at the DFC is based on secondary sources

including various government documents, reports, and databases. Secondary data was utilized for the development of the *DFC Existing Site Conditions* report, which is a component of the DFC master site plan process. Applicable regulatory references for this resource include the Clean Air Act (CAA) and the Colorado State Implementation Plans (SIPs) for criteria pollutants.

The EPA defines ambient air in Section 40 of the Code of Federal Regulations (CFR) Part 50 as "that portion of the atmosphere, external to buildings, to which the general public has access." In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 Amendments (CAAA), the EPA has promulgated ambient air quality standards and regulations. The National Ambient Air Quality Standards (NAAQS) were enacted for the protection of the public health and welfare, allowing for an adequate margin of safety. To date, the EPA has issued NAAQS for six criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO_2), particles with a diameter less than or equal to a nominal 10 micrometers (PM_{10}), ozone (O_3), nitrogen dioxide (NO_2), and lead (Pb).

There are two types of standards: primary and secondary. Primary standards are designed to protect sensitive segments of the population from adverse health effects which may result from exposure to criteria pollutants. Secondary standards are designed to protect human health and welfare, and in some cases, are more stringent than the primary standards. Human welfare is considered to include the natural environment (vegetation) and the human-made environment (physical structures). Areas that are below the NAAQS are in "attainment," while those that equal or exceed the standards are in "nonattainment."

Although the EPA has the ultimate responsibility for protecting ambient air quality, each state and local government has the primary responsibility for air pollution prevention and control. The CAA requires that each state submit a SIP which describes how it will attain and maintain air quality standards in nonattainment areas. The SIP must be approved by the EPA for each criteria pollutant.

Regionally, air quality in the Denver Metropolitan Area (DMA), with its large and expanding population, is an issue of on-going concern. The DMA is currently classified as having a nonattainment status for PM_{10} and CO, and as transitional for O_3. The NAAQS for these criteria pollutants are summarized in Table 3. The health and welfare effects of these criteria pollutants are described below:

- **Particulate Matter (PM_{10})** — the tiny particles of solid or semi-solid material found in the atmosphere, often referred to as dust. It is classified according to size. PM_{10} pollutants are composed of particulate matter smaller than 10 microns. Particulate matter can reduce lung function, aggravate respiratory conditions, and may increase the long-term risk of cancer or development of respiratory problems.

- **Carbon Monoxide (CO)** — a colorless, odorless, tasteless and toxic gas that is formed through incomplete combustion of crude oil, fuel oil, natural gas, wood waste, gasoline, and diesel fuel. Most combustion processes produce at least a small quantity of this gas, while motor vehicles constitute the largest single source. Human exposure to CO can result in serious health effects before exposure is ever detected by the human senses. The most

serious health effect of CO results when inhaled. It enters the bloodstream and prevents oxygen from combining with hemoglobin, impeding the distribution of oxygen throughout the bloodstream. This process significantly reduces the ability for people to do manual tasks.

- **Ozone (O_3)** — an oxidant that is a major component of urban smog. O_3 is a gas that is formed naturally at higher altitudes and protects the earth from harmful ultraviolet rays. At ground level, O_3 is a pollutant created by a combination of hydrocarbons, nitrogen oxides, and sunlight, through photochemistry. Ground level O_3 is odorless, colorless, and is the predominant constituent of photochemical smog. Human exposure to O_3 can cause eye irritation at low concentration and respiratory irritation and inflammation at higher concentrations. Respiratory effects are most pronounced during strenuous activities. O_3 exposure will deteriorate human-made materials and reduce plant growth and yield.

Table 3: Applicable National Ambient Air Quality Standards

Pollutant	National Ambient Air Quality Standards
PM_{10}	
Averaged over 24 hours	150 ug/m^3 *
Averaged annually	50 ug/m^3
CO	
1-hour maximum[a]	35 ppm **
8-hour maximum[a]	9 ppm
O_3	
1-hour maximum[b]	0.12 ppm

a Maximum concentration not to be exceeded more than once per year.
b Expected number of exceedance days shall not be more than one per year (3-year average) as determined by Appendix H of 40 CFR Part 50.
* ug/m^3 = micrograms per cubic meter
** ppm = parts per million
Source: 40 CFR Part 50.

Because the DMA is designated as nonattainment for CO and PM_{10} and as transitional for O_3, an SIP was prepared for each of these pollutants. The DMA SIP for PM_{10} was prepared by the Air Pollution Control Division (APCD) of the CDPHE and the Regional Air Quality Council (RAQC), and submitted to the EPA for approval. The SIP for CO has also been prepared and submitted to the EPA for approval, and a 10-year plan for maintaining O_3 standards is in preparation by the RAQC. The DMA is also the first area in the nation to have an urban visibility standard that defines an acceptable level of visual air quality. This visible aspect of air quality is reported in terms of the " Visibility Standard Index" (VSI), which applies during the core daylight hours of 8 a.m. to 4 p.m. The standard is 0.076 per kilometer of atmospheric extinction, which means that 7.6 percent of the light in a kilometer of air is blocked. For a violation to occur, this level must be exceeded when averaged over four hours (General Services Administration, *USGS National Water Quality Laboratory Environmental Assessment*, 1996).

The history of nonattainment air pollution violations and visibility in the DMA follows:

PM_{10}: Although still designated as a PM_{10} nonattainment area, the DMA recorded only one exceedance of the standard in the six years prior to 1992. However, during the week of December

7, 1992, meteorological conditions led to three exceedances in five days. There have been no exceedances in 1993, 1994, and 1995 (General Services Administration, *USGS National Water Quality Laboratory Environmental Assessment*, 1996).

CO: Violations of the 8-hour CO standard occurred frequently in the late 1970s and early 1980s. By the 1990s, the highest value was only 25 percent greater than the standard except for one week in December 1992, during which meteorological conditions contributed to a CO violation that was nearly twice the standard. There were two exceedances in 1993, one in 1994, and at least two in 1995; each of these marginally exceeding the standard. There have been no recorded exceedances of the 1-hour CO standard; this is a function of the magnitude of the standard, the relationship between peak-hour and 8-hour average traffic volumes, and the behavior of the pollutant (General Services Administration, *USGS National Water Quality Laboratory Environmental Assessment*, 1996).

O_3: The standard for O_3 was attained in 1991, with one exceedance in 1993. From that time until July 29, 1995, there were no exceedances. On that day, a value of 0.126 ppm was recorded at one monitor; there have been no exceedances since then. The process for redesignation to attainment status in the DMA has begun. This requires development of a 10-year plan that includes measures necessary to maintain the standard over that period (General Services Administration, *USGS National Water Quality Laboratory Environmental Assessment*, 1996).

Visibility ("Brown Cloud"): The EPA has defined urban visibility standards for Denver to address visibility issues resulting from PM_{10}, including nitrates and sulfates. Programs related to maintenance of the visibility standards are implemented on a seasonal basis, November through March. When exceedances are anticipated, pollution advisories are issued and " No Burn" days are declared and widely publicized. The standards were exceeded on 97 days in 1991, 69 days in 1992, 168 days in 1993, and 138 days in 1994. Days other than violation days are accounted for in one of three ways: days on which the standard was not violated, days when the humidity (or precipitation) did not allow valid readings, or days on which the monitor was not functioning.

Air pollution throughout the eight-county air quality control region is attributed to emissions from motor vehicles, a variety of industrial sources, street sanding, and wood burning activities. The predominant source of the air pollutants discussed above is motor vehicles. Improvements in air quality over the last several years are largely the result of the improved emission characteristics of the motor vehicle fleet, implementation of an Inspection and Maintenance Program, and use of oxygenated fuels in winter. Air quality impacts for proposed transportation system improvements are estimated at the project level by investigating the project's effect on the total number of miles driven regionally, and the potentially increased congestion at specific locations named "hot spots" (General Services Administration, *USGS National Water Quality Laboratory Environmental Assessment*, 1996).

The major potential sources of air pollution associated with the DFC include emissions from commuter trips and emissions from heating and cooling units. An estimation of the current levels of air emissions associated with on-going activities at the DFC is incorporated into the impact analysis calculations found in Section 4.1.4.

3.1.5 Noise

Implementation of the Proposed Action has the potential to include construction, demolition, and operational activities that may affect ambient noise levels within the DFC property and adjacent areas. The ROI for this resource includes the DFC and adjacent properties. The assessment of existing and anticipated noise-related issues is based on primary and secondary data sources. Primary noise sources include on-site noise level monitoring conducted during peak p.m. commuting periods at the DFC's major ingress and egress portals. Secondary sources include information and data relevant to all aspects of noise from various government documents, reports, and regulatory standards. Primary and secondary data was utilized for the development of the *Existing Site Conditions* report, which is a component of the DFC master site plan process. Applicable regulatory references for this resource include the following: FHWA standards; EPA standards; Occupational Safety and Health Administration (OSHA) standards; and the Noise Control Act.

This section describes ambient background traffic noise within and around the DFC. The Noise Control Act of 1972 was enacted to establish noise control standards and to regulate noise emissions from commercial products such as transportation and construction equipment. The Act exempts regulation of noise from military weapons or equipment designated for combat use. The standard measurement unit of noise is the decibel (dB), which represents the acoustical energy present. Noise levels are measured in A-weighted decibels (dBA), a logarithmic scale which approaches the sensitivity of the human ear across the frequency spectrum. A 3 dB increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear. Noise levels vary continuously with time. To account for this variance over time, the measure L_{eq} is used, which is the average sound pressure level measured in decibels over a selected time period.

The FHWA has established noise abatement criteria for roadways. These criteria, shown in Table 4, are used in the absence of more stringent local standards to evaluate existing noise levels on the roadways exterior to the DFC as part of the analysis of baseline conditions. An exterior L_{eq} of 72 dBA is the standard typically used to evaluate noise levels in developed urban areas similar in character to the roadways surrounding the DFC (see Activity Category C, Table 4). The City of Lakewood Municipal Code (Section 9.52.140) prohibits construction activity in commercial or residential districts between the hours of nine p.m. and six a.m.; however, the city has not adopted any noise level standards that apply to roadways or construction activities (J. Hutchinson, October 1996).

Off-Site Noise Sources: The neighborhood area around the DFC is generally developed in character, with the primary sources of noise being traffic on roadways, off-site construction activity, and airplane flyovers. The four principal roadways that bound the site are Kipling Street, Alameda Avenue, and Union Boulevard, each a four-lane, two-way street, and Sixth Avenue, a major six-lane divided arterial. Noise measurements were taken during peak p.m. commuting periods near four of the DFC's major ingress and egress portals. This data is summarized in Table 5. These noise monitoring locations were selected because they represent the

greatest potential source of noise at the DFC, and because they are in close proximity to potential noise receptors near the DFC.

Table 4: Threshold for Noise Interference and Noise Abatement Criteria (dBA)

Activity Category	Noise Abatement* L_{10}	L_{eq}	Criteria Description of Activity Category
A	60	57	Tracts of land for which serenity and quiet are of extraordinary significance and which serve an important public need. The preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, open spaces, or historic districts that are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B (Exterior)	70	67	Picnic areas, recreation areas, playgrounds (Exterior), active sports areas, and parks that are not included in Category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries, and hospitals.
C (Exterior)	75	72	Developed lands, properties, or activities not included in Category A or B above.
D	—	—	For requirements on underdeveloped lands see paragraphs 11a and c of Federal Aid Highway Program Manual Volume 7, Chapter 7, Section 3.
E (Interior)	55	52	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

* dBA = A-weighted decibels

L_{eq} is the average sound pressure level measured in decibels over any selected time period.

L_{10} is the upper 10 percent of the sound pressure level measured in decibels over any selected time period.

Source: FHWA Report "A Field Review of the Highway Traffic Noise Impact Identification and Mitigation Decision-making Processes."

On-Site Noise Sources: The interior area of the DFC is generally institutional/administrative in character, with few operational-related noise sources. The primary sources of noise at the DFC are traffic on roadways, on-site construction activity, and airplane flyovers. Potential noise impacts associated with the Proposed Action include noise generated from construction/demolition activities, and traffic during peak commuting hours.

Table 5: Noise Measurements - Peak P.M. Commuting Period

Site	Date/Time	Min. (dBA)	Max. (dBA)	L_{eq} (dBA)
Alameda Avenue (opposite Gate #7)	July 24, 1996 4:47 - 5:17 p.m.	53.8	80.4	69.0
Simms Street and Alameda Avenue (east of Union Street)	July 25, 1996 4:40 - 5:10 p.m.	49.4	74.9	67.3
100 yards north of Gate #1 (on Kipling Street in front of school entrance)	July 30, 1996 4:41 - 5:11 p.m.	51.6	105.6*	62.8
Gate #4 (on southeast corner of Union Boulevard and entrance to Gate #4)	July 31, 1996 4:51 - 5:21 p.m.	57.6	77.8	66.9

* Note: A pedestrian passing by screamed into microphone, causing the 105 dBA reading.

Source: Balloffet and Associates, Inc., *Noise Measurements-DFC*, 1996.

3.2 Biological Resources

The biological resources at the DFC evaluated in this subsection include vegetation, wetlands, wildlife resources, and threatened and endangered plants and wildlife.

3.2.1 Vegetation

Implementation of the Proposed Action has the potential to affect only vegetation on the DFC property; therefore, the ROI for this resource is limited to within the DFC boundaries. The profile of existing vegetation/habitat at the DFC was developed using primary and secondary data sources. Primary data sources include information gathered and confirmed during on-site reconnaissance at the DFC. Secondary data sources include existing reports, documents, maps, and aerial photographs. Primary and secondary data were utilized for the development of the *DFC Existing Site Conditions* report, a component of the master site plan process. Applicable regulatory references for this resource include Executive Order 11514 - Protection and Enhancement of Environmental Quality and the Endangered Species Act (ESA).

Prior to the settlement of the land occupied by the DFC and surrounding areas, the existing climax vegetation was short grass prairie, dominated primarily by blue grama (*Bouteloua gracilis*) buffalograss (*Buchloe dactyloides*) and other species depending upon the available moisture and soils present in specific areas. The prairie communities were divided only by those plant species that occurred within drainageways, river valleys and other isolated areas with deeper soils and increased moisture. Vegetation in these areas included eastern cottonwoods (*Populus deltoides*), willows (*Salix sp.*), and various other broadleaf deciduous species. In the lower foothill areas (6,000 to 6,500 ft. above mean sea level (msl) to the west of the DFC, the original climax vegetation included gambel oak (*Quercus gambelii*), mountain mahogany (*Cercocarpus montanus*), squaw current (*Ribes cereum*), three-leafed sumac (*Rhus trilobata*), pinyon pine (*Pinus edulis*), Rocky Mountain juniper (*Juniperus scopulorum*), and one-seeded juniper (*Juniperus monosperma*). In the upper foothills (6,500 to 8,000 ft. above msl) the original dominant vegetation was ponderosa pine (*Pinus ponderosa*) on the drier south-facing slopes and Douglas fir (*Pseudotsuga menziesii*) on the moister north-facing slopes. While much of the original vegetation in the lower and upper foothill areas is still present today, none of the native prairie remains. However, remnants of the original riparian vegetation persist within the former prairie region and on the DFC property (General Services Administration, 1979).

Except for several areas of naturally occurring vegetation, the majority of the plant species that currently exist at the DFC have been planted for landscaping purposes. Landscape plantings at the DFC were initiated during the 1940s, not only to enhance the appearance of the DOP, but also to help reduce dust that might infiltrate and compromise the ammunition-manufacturing equipment. Areas of naturally occurring vegetation currently present at the DFC are limited to vegetated segments of McIntyre Gulch and land surrounding Downing Reservoir, plus several areas within the northern portion of the DFC associated with the detention ponds and the Agricultural Ditch. The largest area of naturally occurring vegetation occurs along McIntyre Gulch, immediately to the east of the Agricultural Ditch. This area is dominated by a mixture of the following tree and shrub species: eastern cottonwood (*Populus deltoides*), willows (*Salix sp.*), green ash (*Fraxinus pennsylvanica*), chokecherry (*Prunus virginiana*), Russian olive (*Elaeagnus angustifolia*), and honeylocust (*Gleditsia triacanthos*). Other areas along McIntyre Gulch containing naturally

occurring vegetation are dominated by a mixture of eastern cottonwoods and willows. The land surrounding Downing Reservoir is dominated by a mixture of eastern cottonwoods, elms (*Ulmus sp.*), and willows. Areas of naturally occurring vegetation in the northern portion of the DFC include stands of cattails (*Typhia latifolia*) and bulrushes (*Scirpus sp.*) within the existing detention ponds. Along the eastern edge of Detention Pond #3 is an area dominated by a mixture of eastern cottonwoods, willows, and sandbar willows (*Salix exuga*). In addition, several areas associated with the Agricultural Ditch in the northern portion of the DFC are dominated by stands of sandbar willows. See Figure 10 for an illustration of the distribution of these areas of naturally occurring vegetation at the DFC.

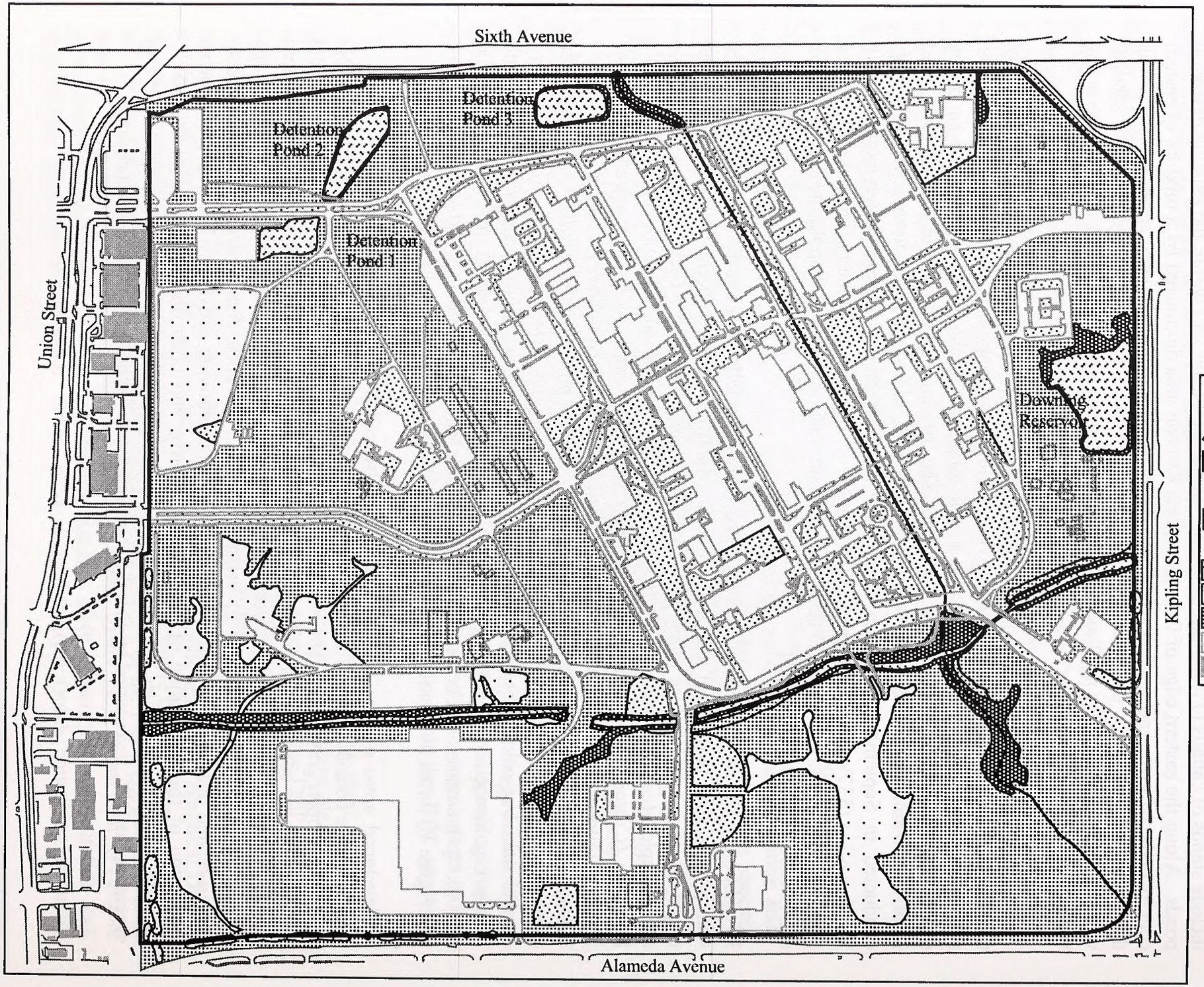
The majority of the tree and shrub species at the DFC occur within landscaped areas. Most of these species have been planted to provide various landscaping functions including shade, aesthetic enhancements, wind breaks, or visual screenage. Most of these species occur along roads, walkways, parking areas, or buildings. The 10 most common tree and shrub species identified within the landscaped portions of the DFC during a vegetation inventory study conducted in September 1995 (and respective numbers of each) were: honeylocusts (562); Russian olive (537); pine (*Pinus sp.*) (358); elm (314); blue spruce (*Picea pungens*) (281); green ash (249); juniper (*Juniperus sp.*) (202); eastern cottonwood (192); crabapple (*Malus sp.*) (186); and hackberry (*Celtis sp.*) (123).

In addition to the most prevalent species listed above, the following species were also identified within landscaped portions of the DFC: white fir (*Abies concolor*), box elder (*Acer negunda*), red maple (*Acer rubrum*), silver maple (*Acer sacharinum*), sugar maple (*Acer sacharum*), emerald queen maple (*Acer sp.*), catalpa (*Catalpa sp.*), redbud (*Cercis canadensis*), dogwood (*Cornus sp.*), hawthorn (*Crataegus sp.*), forsythia (*Forsythia sp.*), black walnut (*Juglans nigra*), one-seeded juniper (*Juniperus monosperma*), golden raintree (*Koelreuteria paniculata*), larch (*Larix laricina*), lodgepole pine (*Pinus contorta*), pinyon pine, limber pine (*Pinus flexilis*), smooth-barked cottonwood (*Populus acuminata*), quaking aspen (*Populus tremuloides*), plum (*Prunus sp.*), gambel oak, bur oak (*Quercus macrocarpa*), red oak (*Quercus rubra*), staghorn sumac (*Rhus typhina*), golden currant (*Ribes sp.*), black locust (*Robinia pseudoacacia*), rose (*Rosa sp.*), lilac (*Syringa sp.*), tamarisk salt cedar (*Tamarix chinensis*), basswood (*Tilia sp.*), and yucca (*Yucca sp.*). See Figure 10 for an illustration of the distribution of landscaped areas at the DFC.

Undeveloped areas of the DFC that are not landscaped or do not contain naturally occurring vegetation are considered open space areas. Open space areas at the DFC are further described as being either open grassland areas or open disturbed areas. Open grassland areas occur throughout the DFC, but are concentrated within the southern and western portions. The open disturbed areas also occur within the southern and western portions of the DFC, and are characterized as containing little or no vegetation. The lack of vegetation within the open disturbed areas is attributed to human-related disturbances such as construction or earthmoving activities. See Figure 10 for an illustration of the distribution of open grassland areas and open disturbed areas at the DFC. Invasive exotic plant species are known to occur at the DFC. A comprehensive list of all plant species at the DFC inventoried by four different vegetative studies is provided in Appendix A.

Areas of Vegetation at the DFC

Figure 10



3.2.2 Wetlands

Implementation of the Proposed Action has the potential to affect wetland resources within the DFC property, as well as off-site wetlands that are hydrologically connected with the DFC. The ROI for this resource includes: the DFC property; the downstream segment of McIntyre Gulch between the DFC and Lakewood Gulch; and the downstream segment of the Agricultural Ditch between the DFC and Wolcott Lake. The profile of existing wetland resources at the DFC is based on primary and secondary data sources. Primary data sources include information gathered and confirmed during on-site reconnaissance at the DFC. A wetlands survey was conducted by the U.S. Army Corps of Engineers for the northwest portion of the DFC property in July 1997. This survey was conducted to delineate wetland resources near the proposed RTD three-acre expansion area Secondary data sources include existing reports, documents, maps, and aerial photographs. Primary and secondary data were utilized for the development of the *Existing Site Conditions* report, which is a component of the DFC master site plan process. Applicable regulatory references for this resource include Executive Order 11990 - Protection of Wetlands and the Clean Water Act (CWA).

Wetlands are defined in the *Corps of Engineers Wetland Delineation Manual (1987)* as those areas which are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands possess three characteristics: (1) hydrophytic vegetation; (2) hydric soils and; (3) wetland hydrology. A jurisdictional determination by the Corps is required to formally confirm the presence and limits of all wetlands subject to regulatory protection under Section 404 of the CWA.

The National Wetland Inventory Maps (NWI) (Fort Logan, CO & Morrison, CO quadrangles), prepared by the USFWS indicate the presence of four different wetland areas at the DFC. Specifically, the NWI maps identified two small Palustrine Open Water Artificial Intermittently Exposed/Permanent (POWKZ) wetlands near the center of the DFC, one POWKZ wetland near the center of the northern border, and one Palustrine Flat Saturated/Semipermanent/Seasonal (PFLY) wetland, near the center of the eastern border. The two small POWKZ wetlands identified near the center of the DFC are located on the NWI map between Center Avenue and Main Avenue, and immediately to the west of Eighth Street. Upon site reconnaissance, no hydrological or vegetative indicators of these wetland resources were observed at this location. The POWKZ wetland near the central eastern border of the DFC is the same waterbody identified as Downing Reservoir. This wetland resource was observed during site reconnaissance activities. The PFLY wetland identified near the central northern border of the DFC is located between North Avenue and Sixth Avenue, and is the same waterbody identified as Detention Pond #3. Two additional detention basins (ponds #1 and #2) were also observed in the northwest portion of the DFC. Each of the three detention ponds supports some hydrophytic vegetation (cattails) and appear to function to some degree as wetland resources. In addition, linear wetland resources may be associated with McIntyre Gulch (including its tributaries located to the west and east of Building #810) and the Agricultural Ditch. Both of these surface water resources pass through the DFC and might be considered to be "Waters of the United States" under the CWA.

The final decision is up to the U.S. Army Corps of Engineers pending a verified jurisdictional determination.

The wetland survey conducted for the northwest portion of the DFC property in July 1997 confirmed the presence and delineated the location of several wetland resource areas in this portion of the DFC. These include the following wetland resource areas:

- Detention Pond #2 (47,291 sq. ft., 1.1 acres);
- Detention Pond #3 (123,466 sq. ft., 2.8 acres);
- A pocket area located just to the east of the proposed RTD Expansion Area (1,627 sq. ft., 0.04 acre);
- The concrete drainage channel between Detention Pond 2 and Detention Pond 3 - Area #1 (9,397 sq. ft., 0.21 acre), Area #2 (363 sq. ft., 0.008 acres), Area #3 (785 sq. ft., 0.018 acres);
- A wetland area located along the DFC property boundary to the north of Detention Pond #3 (11,243 sq. ft., 0.26 acre); and
- A linear area located to the east of the Agricultural Ditch, just north of the Detention Pond #3 drainage structure (1,225 sq. ft., 0.03 acre).

The wetland resource areas observed at the DFC are located as depicted in Figure 9 (except for the less than 1 acre areas listed above). It should be noted that NWI maps are based on stereoscopic interpretation of high-altitude aerial photographs and not on field observations. NWI wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with *Classification of Wetland and Deep-Water Habitats of the United States,* (an Operational Draft) Cowardin et al., 1977. Each of the wetland resources described as occurring at the DFC will require a jurisdictional determination by the Corps to formally confirm their presence and limits for regulatory protection under Section 404 of the CWA.

Off-site wetlands hydrologically connected to the DFC may be influenced by activities on the DFC. According to the NWI map, there are no wetlands associated with the downstream segment of the McIntyre Gulch between the DFC and its confluence with the Lakewood Gulch. According to the NWI map, there are three wetlands associated with the downstream segment of the Agricultural Ditch between the DFC and Wolcott Lake. The first is a Palustrine Emergent Intermittently Flooded/Temporary (PEWM) wetland that is approximately four acres in size. The second is a Palustrine Open Water Artificial Semipermanent wetland that is approximately one acre in size. These two wetland areas are both located east of Kipling Street and south of Alameda Avenue, approximately one-half mile from the DFC. The third is a Palustrine Emergent Seasonal Wetland approximately one acre in size. This wetland is located to the south of West Jewel Avenue and east of the Green Gables School, approximately four miles from the DFC.

3.2.3 Wildlife Resources

Implementation of the Proposed Action has the potential to affect only wildlife resources on the DFC property; therefore, the ROI for this resource is limited to within the DFC boundaries. The profile of existing wildlife resources at the DFC was developed using primary and secondary data sources. Primary data sources include information gathered and confirmed during on-site

reconnaissance at the DFC, and information provided by the DFC Interpretive Trails and Wildlife Committee (ITWC). Secondary data sources include existing reports, documents, and maps. Primary and secondary data were utilized for the development of the *Existing Site Conditions* report, a component of the DFC master site plan process. Applicable regulatory references include the Fish and Wildlife Coordination Act and the Endangered Species Act (ESA).

Wildlife species presently occurring within the DFC include those species typically found in urbanized/developed environments such as rodents, starlings, pigeons, and squirrels. These species are most commonly observed within the landscaped portions of the DFC. In addition, those areas of the DFC that contain naturally occurring vegetation or open space grassland provide suitable habitat and/or forage areas for a wide variety of species. A list of wildlife species documented to occur at the DFC is provided in Appendix B. This list is intended to be considered only a partial list of the wildlife species observed at the DFC. It identifies 19 species of mammals, 149 species of birds, 9 species of reptiles, and 7 species of amphibians. Population estimates of the wildlife species occurring at the DFC do not exist for inclusion within this document (General Services Administration EIS, 1979).

In March 1994, the ITWC prepared a plan for the relocation of a prairie dog colony residing near the western boundary of the DFC to the southeastern corner. The designated relocation site consists of the open space area bounded by McIntyre Gulch, the Agricultural Ditch, Kipling Street, and Alameda Avenue. The ITWC recommends that the designated relocation area be largely unmanaged, but regularly monitored to ensure that the colony size, natural predation controls, and surrounding vegetation are sufficient to sustain the prairie dog population.

In 1995, the ITWC prepared a Habitat and Wildlife Recommendations Report that identified 17 specific sites at the DFC that serve to some extent as wildlife habitat areas, or possess unique natural attributes (see Table 6). The ITWC recommends each of these sites for future habitat management or protection (see Figure 11). In addition to these sites, on-site reconnaissance at the DFC identified wildlife habitat areas around Downing Reservoir and along McIntyre Gulch.

3.2.4 Threatened and Endangered Plants and Wildlife

Implementation of the Proposed Action has the potential to affect only threatened and endangered species on the DFC property; therefore, the ROI for this resource is limited to within the DFC boundaries. An assessment of threatened and endangered species with the potential to occur at the DFC was developed using primary and secondary data sources. Primary data sources include information gathered and confirmed during on-site reconnaissance at the DFC and interviews with government officials. Secondary data sources include existing reports, documents, and maps. Primary and secondary data were utilized in the development of the *DFC Existing Site Conditions* report, which is a component of the DFC master site plan process. The applicable regulatory reference for this resource is the ESA.

Table 6: Interpretive Trails and Wildlife Committee's DFC Habitat Protection Sites

Site	Description
A	Stand of cottonwoods providing wildlife habitat for great horned owls, American kestrel, red-tailed and Swainson's hawk, coyotes, and prairie dogs.
B	Dense area of natural riparian vegetation containing important wildlife habitat and a habitat corridor for a wide variety of species. This area is also described as containing geologic exposures unique to the DFC in addition to unique visual values.
C	Dense area of natural riparian vegetation containing important wildlife habitat and a habitat corridor for a wide variety of species. This area is also described as containing geologic exposures unique to the DFC in addition to unique visual values.
D	A small marsh area (Detention Pond #1) with emergent wetland vegetation (cattails) and young trees.
E	A wetland area (Detention Pond #2) characterized by willow trees, cattails, purple loosestrife, and habitat for red-winged blackbirds.
F	A wetland area (Detention Pond #3) characterized by bulrush, purple loosestrife, and habitat for waterfowl, muskrat, and a variety of birds, reptiles, amphibians, and small mammals.
G	A small natural woodland area that serves as habitat for birds and small mammals.
H	Open meadow area serves as habitat for relocated prairie dog colony, plus owls, hawks, and coyotes.
I	A riparian area that serves as a tributary to McIntyre Gulch and contains natural vegetation.
J	A seep area with marsh vegetation and is described as appearing to be receiving leachate from an old land fill, based on the odor. The presence of white and purple sulfur bacteria demonstrates that a sulfur cycle is occurring.
K	A long, narrow cattail marsh in the drainageway that receives water from Site J.
L	A seep area that supports a wetland dominated by willows and provides habitat/denning areas for coyotes.
M	A riparian area with a canopy of cottonwoods along the western portion of McIntyre Gulch on the DFC that includes a natural cascade that flows over an exposure of the Denver Formation.
N	An area with mature cottonwoods along a storm drainageway.
O	A storm drainageway that contains wetland plants and shrubs, and is habitat for coyotes and Canadian geese.
P	A small spring area that supports wetland marsh vegetation (cattails).
Q	A wildflower garden area planted in 1993.

Source: DFC ITWC 1995.

Information prepared by the USFWS, Ecological Services, Colorado Field Office, regarding the Federally listed and candidate species within Jefferson County is presented in Table 7. These species are identified as occurring within Jefferson County as of September 26, 1995, or as having a historic range that includes Jefferson County. Table 7 represents the most current listing of Federally protected species in Jefferson County. A designation of "endangered" means that a species is in danger of extinction throughout all or a significant portion of its range. The designation of "threatened" means that a species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. A "candidate" designation indicates that sufficient information on a species exists to indicate that formal listing under the ESA may be appropriate. According to the USFWS records, there are no documented occurrences of any Federally listed or candidate species within the DFC property (See Section 7).

ITWC Identified Habitat Protection Sites at the DFC

Figure 11

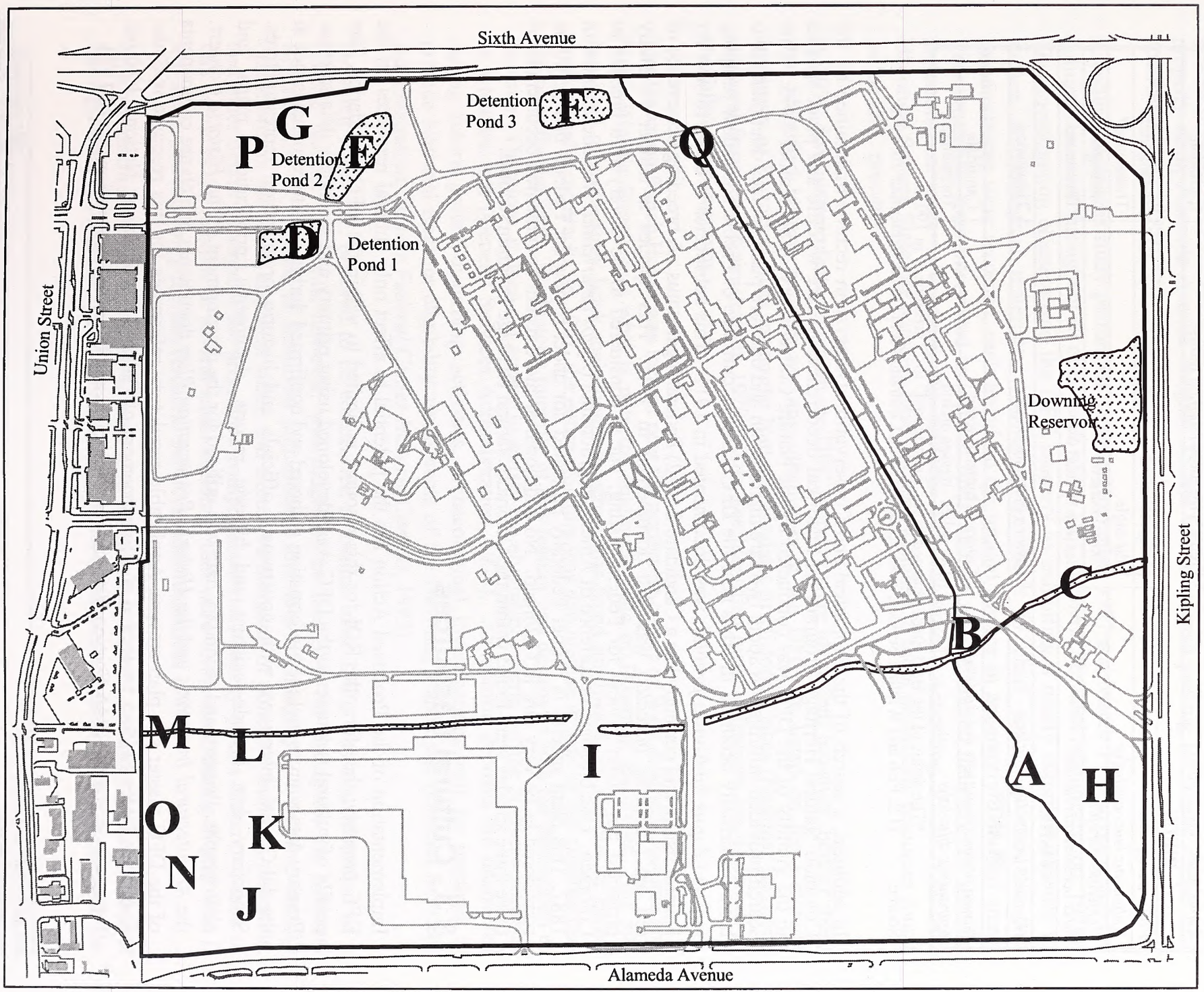


Table 7: Federally Listed and Candidate Species, Jefferson County

Scientific Name	Common Name	Federal Status
MAMMALS		
Zapus hudsonius preblei	Preble's meadow jumping mouse	Candidate
BIRDS		
Falco peregrinus	peregrine falcon	Endangered
Haliaeetus leucocephalus	bald eagle	Threatened*
Numenius borealis	Eskimo curlew	Endangered
Strix occidentalis lucida	Mexican spotted owl	Threatened
FISHES		
Hesperia leonardus montana	Pawnee montane skipper	Threatened
PLANTS		
Gaura neomexicana ssp. *coloradensis*	Colorado butterflyweed	Candidate
Spiranthes diluvialis	Ute ladies'-tresses orchid	Threatened

*The status of the Bald Eagle changed from "Endangered" to "Threatened" in 1995.

Source: U.S. Fish and Wildlife Service, Ecological Services, Colorado Field Office September 26, 1996.

In addition, a search of the Biological and Conservation Datasystem records maintained by the Colorado Natural Heritage Program for historical occurrences of rare wildlife and plant species in the vicinity of the DFC was conducted by the Nature Conservancy in September 1995. This search provided information about two rare mammalian and one rare plant species documented to have historically occurred in areas near the DFC. One occurrence of Preble's meadow jumping mouse (*Zapus hudsonius preblei*) was documented in 1911. This subspecies is under review for Federal listing and currently has a Candidate-2 (C-2) Federal legal status. A breeding occurrence of red bat (*Lasiurus borealis*) was also documented in 1911. This species is neither Federally protected nor under review for Federal listing, but is considered to be a very rare breeder in Colorado. One breeding occurrence of American groundnut (*Apios americana*) was documented in 1887. This plant species is neither Federally protected nor under review for Federal listing, but is considered to be very rare in Colorado. No additional or more recent documented occurrences of these three species were found within the Colorado Natural Heritage Program records.

3.3 Cultural Resources

Implementation of the Proposed Action has the potential to affect only cultural resources on the DFC property; therefore, the ROI for this resource is limited to within the DFC boundaries. The profile of cultural resources at the DFC were developed using primary and secondary data sources. Primary data sources included information gathered and confirmed during on-site reconnaissance at the DFC, and interviews with government officials and historic organization representatives. Secondary data include existing and historic reports, documents, publications, maps, and photographs. Primary and secondary data was utilized for the development of the *Historic Context*, the *Architectural Inventory*, and the *Historic Preservation Plan* documents, which are components of the DFC master site plan process. Applicable regulatory references for this resource include: Executive Order 11593 - Protection and Enhancement of Cultural Environment; National Historic Preservation Act (NHPA), Section 106; and Archeological and Historic Preservation Act of 1974.

A cultural resources investigation at the Colorado Historical Society revealed that only one prehistoric archaeological site has been recorded within a one-mile distance of the DFC property boundaries (General Services Administration, *Denver Federal Center Historic Context*, 1995). This site consists of a surface find of one fragment of a core manufactured from petrified wood, an artifact of unknown affiliation. This site is located approximately 4,000 feet southwest of the DFC property along Alameda Avenue, roughly 35 feet west of a mall parking lot (Louis Berger and Associates, Inc., 1995).

A cultural resources study performed between November 1977 and March 1978 investigated for cultural resources throughout all open lands of the DFC (General Services Administration, 1979). This investigation characterized the DFC property as exhibiting a nearly complete absence of surface archaeological materials. However, six flakes (3 chert and 3 quartz) and two hammerstones were recorded, each found on the ground surface in apparently disturbed areas. These materials were interpreted as isolated finds, and are not considered indicative of specific archaeological sites. No diagnostic artifacts were identified. According to the Colorado Historical Society State site numbers have not been assigned to these prehistoric resources found on the DFC property.

In 1978, five historic features within the DFC property were identified; however, neither these five identified historic features nor any other sites at the DFC are listed on the Colorado Inventory of Historical Sites, or on the National Register of Historic Places (National Register) (General Services Administration, 1979). The five identified historic features are described in the following paragraphs.

The Downing Ranch House was located near the northwest corner of West Alameda Avenue and South Kipling Street, near what is now the southwest edge of Downing Reservoir. This site consisted of a one-story brick main house structure that faced northward, in addition to barns, corrals, and a racetrack. In 1941, the entire structure was demolished as part of the construction activities for the DOP. The historic integrity of this feature was destroyed with the destruction of this site. Therefore, it does not appear to satisfy the eligibility criteria for the National Register as a historic site (General Services Administration, 1979). As historic deposits are uncovered during future ground-disturbing activities, archaeological investigations will be required to provide National Register eligibility assessments of the Downing Ranch site (General Services Administration, *Denver Federal Center Historic Context*, 1995).

Downing Reservoir, believed to be constructed sometime after 1900, was also identified as a historic feature. This site, however, was judged to be ineligible for listing on the National Register due to its lack of historical significance and loss of integrity. Extensive landfill operations on the south and west sides, and excessive dumping of concrete, building materials, and other debris throughout the area, have compromised the integrity of this feature. Much of this debris is the remains of several small buildings that were constructed during World War II and destroyed following the war (General Services Administration, 1979).

The two ditches located on the DFC were also identified as historic features: Welch Ditch and the Agricultural Ditch. Welch Ditch runs in a general northwest-southeast direction through the

DFC, while the Agricultural Ditch runs in a mostly north-south direction through the DFC. Each ditch was constructed during the last quarter of the 19th century and both are associated with Jacob Downing. Although each of these ditches is still present on the DFC today, they have been severely modified over the course of time by government activity. Welch Ditch was realigned from its original location, while the Agricultural Ditch was channelized as early as 1941. Due to the lack of integrity both ditches exhibit, neither feature is considered to meet the eligibility criteria for the National Register (General Services Administration, 1979).

The fifth feature identified is described as a Sod House previously located due east of the intersection of Seventh Street and Carpenter Avenue. No information is available about the history of this feature, and its exact position and layout is not known. It was reportedly described as being part of the "Old McIntyre Place." No surface evidence of this structure or its location was identified during the 1978 study (General Services Administration, 1979).

In July 1996, the GSA in cooperation with the FHWA initiated a construction project along the eastern boundary of the DFC near Kipling Street. In the course of this construction, an area of historic bricks, concrete, and artifacts was unearthed. Work was suspended and an investigation of the site was performed. As a result of this investigation, two historic foundations were identified along with a scattering of historic artifacts. These foundations were believed to be portions of the historic Downing and Hayden Ranches. Field recordings of these features were made and monitoring of the excavation of a test trench was conducted. No additional structures were encountered during this investigation. The findings were determined to be highly disturbed with little physical integrity remaining, due to the nearly complete removal of the historic structures during the development of the DOP. In a Cultural Resource Management Report it was determined that the site is not considered to be eligible for nomination to the National Register of Historic Places. It was also recommended that construction activity should be resumed at the site, and if any additional cultural resources are encountered, the work should be suspended to allow the proper documentation and evaluation.

During cultural resources background research in 1995, cartographic evidence of a third historic irrigation ditch on the DFC property, not reported in the 1978 study, was discovered. This unnamed ditch was field checked and observed to contain historic irrigation features. This linear irrigation feature was observed to contain *in situ* concrete and wooden water control features. It is located in the southeastern portion of DFC, parallel to and west of the Agricultural Ditch. Historic cartographic representation of this ditch suggests that it was constructed between 1915 and 1937 (General Services Administration, *Denver Federal Center Historic Context*, 1995).

Many of the older buildings and structures present at the DFC represent key elements in the manufacturing and production of ammunition at the DOP for World War II. Eleven of these resources were assessed as holding the most historical importance, and were selected for intensive survey and National Register evaluation in a 1996 study. The importance of these resources, both with respect to their historical associations and potential architectural significance, warranted priority consideration. Buildings and structures at the DFC that were not accorded high priority for inventory, were considered to have only limited potential to meet National Register criteria for individual significance due to their ancillary or supporting functions within the World War II manufacturing complex. Such structures included the administrative, guard, and storage buildings of the DOP. An inventory and

analysis of the architectural integrity and historical significance for each of the 11 buildings was conducted to evaluate which resources would meet the eligibility criteria for National Register listing. During the inventory process, the entire DFC was also assessed regarding its potential to contain one or more National Register-eligible historic districts. These inventoried resources and the recommendations of this study are listed in Table 8. One other World War II period structure, a gate house (Building #5), was also included in the prioritized inventory at the request of the GSA (General Services Administration, *Architectural Inventory*, 1996).

Table 8: Architectural Inventory Findings and Recommendations

Present Building Number	Historic Building Number	Original Function	Recommendation
5	68	Gate house	NE-S
20	2-A	Cartridge Case Manufacture	NE-I
21	12-B	Storage Building, Artillery Shell Manufacturing	NE-I
25	2-B	Cartridge Case, Fuze and Booster Manufacturing	NE-I
40	5	Remington Arms Office & Hospital	NE-I
41	1-C	Cartridge Case Manufacturing	NE-I
45	8	Ballistics Proof House	NE-I
46	11	Lead Shop	NE-I
50	10	Tool and Gage Shop, C-Ration Production	NE-I
53	1-A	Cartridge Case, Fuze Manufacture	NE-I
55	12-A	Cartridge Case, Fuze and Booster Manufacture	NE-I
56	1-B	Cartridge Case, Fuze and Booster Manufacture	NE-I
710	710	Defense Civil Preparedness Agency Region 6 Operations Center	NR-G
Unnumbered	Unnumbered	Office of Civil Defense Emergency Operations Center	NR-G

Key: NE-S = not eligible for NR, lacks significance
NE-I = not eligible for NR, lacks integrity
NR-G = eligible for NR, meets standards for exceptional importance under Consideration G (<50)

Source: General Services Administration, *Architectural Inventory*, 1996.

In addition to these World War II era resources, two post-World War II buildings, not associated with armament manufacturing, were identified as possessing potentially significant associations with American Cold War history. As a result, these resources, Building #710 and an unnumbered Office of Civil Defense Emergency Operations Bunker, were accorded priority consideration for further investigation to determine whether their importance and integrity were sufficient to meet National Register criteria, including Criteria Consideration G governing properties less than 50 years of age (General Services Administration, *Architectural Inventory*, 1996). No other post-World War II buildings at the DFC possess a significant association to the Cold War. The vast majority of government tenants at the DFC between 1945 and 1989 had no connection to Cold War activities, and renovations made to DOP buildings were principally conversions to administrative offices that embodied no special characteristics that reflect a relationship to the Cold War.

According to the findings and recommendations of the 1996 *Architectural Inventory*, only two structures at the DFC appear potentially eligible for listing within the National Register. The first resource is Building #710, which is currently utilized as the FEMA Region 8 Operations Center. This building was previously utilized as the Defense Civil Preparedness Agency (DCPA) Region 6

Operations Center as a base of operations for national disaster or nuclear conflict. Building #710 was constructed in 1969 and is a two-level underground structure with 36,000 square feet of space. This resource is located north of Alameda Avenue, west of Seventh Street and south of Building #710-A. The second resource is an unnumbered building identified as the Office of Civil Defense (OCD) Emergency Operation Center. This one-level structure is a metal quonset hut with approximately 2,500 square feet. It is partially below ground, with several feet of earth fill on top of the structure. The construction date of this structure is unknown, but it is suspected to have been built prior to 1964. It was intended to serve as a base of operations for OCD personnel in the event of a nuclear conflict. Use of this structure was discontinued after the completion of Building #710 in 1969. This resource is bounded by Building #60 to the north, Main Avenue to the south, Sixth Street to the east, and Building #61 and Seventh Street to the west. The location of these two resources is illustrated on Figure 12.

In a letter dated December 6, 1996, the Colorado State Historic Preservation Officer (SHPO) concurred with the analysis for a Determination of Eligibility under Criteria G prepared for the *DFC Historic Preservation Plan* that concluded that both of these two resources were eligible for National Register listing. The SHPO also concurred that the portions of historic Downing and Hayden Ranches uncovered in July 1996 do not meet any eligibility criteria for the National Register of Historic Places (see Section 7).

The *DFC Historic Preservation Plan* document is designed to provide guidance for the management of cultural resources at the DFC. The document consists of the following components: Historic Context; Land Use and Resource Information; Stewardship Plan for Historic Resources; Planning Framework for Future Activities; and Action Priorities.

3.4 Socioeconomic Factors and Infrastructure

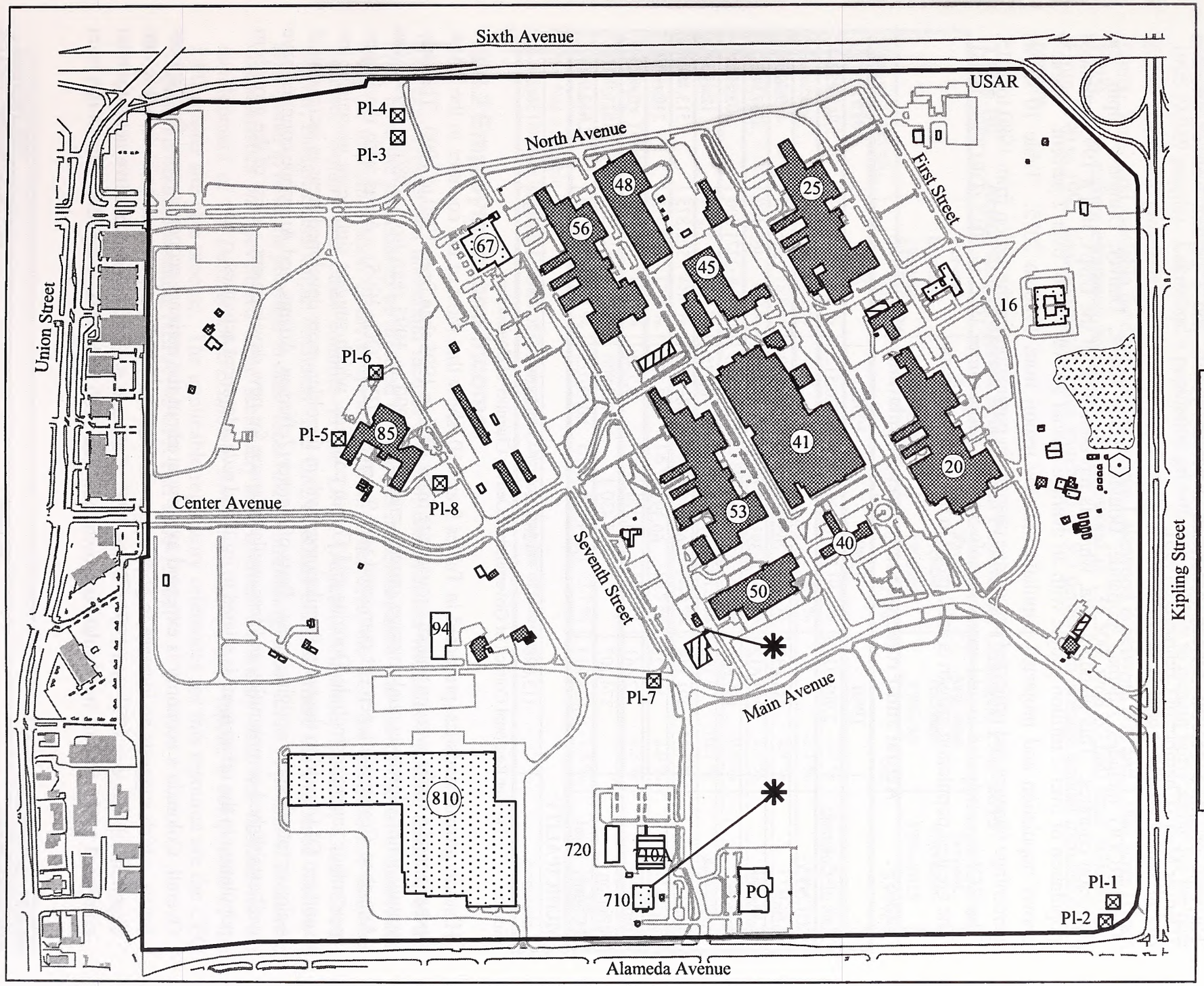
Socioeconomic factors evaluated in this subsection include population, employment and income, housing, community service, recreational resources, and land use. Infrastructure resources evaluated include potable water, sanitary sewers, storm sewers, electric/communications, fire protection, and the abandoned steam system lines.

3.4.1 Population

The populations of communities within commuting distance of the DFC have the potential to be affected by changes in the employment levels at the DFC associated with the implementation of the Proposed Action. Therefore, the ROI for this resource includes Jefferson County and other counties in the DMA (Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, and Gilpin counties). The DMA defines the area where the Proposed Action is anticipated to have the potential to draw local (daily commuting) labor force. The assessment of population is derived primarily using secondary data sources from the U.S. Census Bureau, the Bureau of Economic Analysis, and the Denver Regional Council of Governments (DRCOG). Secondary data was utilized for the development of the *Demographic/Economic Inventory and Analysis* report, a component of the DFC master site plan process. The applicable regulatory references for this resource are the Regulations on Implementing NEPA (40 CFR Part 1500-1508).

Cultural Resources at the DFC

Figure 12



- Historic Ranches
- Potentially Eligible for National Listing
- Prehistoric Isolated Finds

On Site Buildings
- Year Built - Unknown
- 1940 - 1945
- 1946 - 1960
- 1961 - 1970
- 1971 - 1980
- 1981 - 1995
- Water
- Streets
- DFC Boundary
- Off-Site Buildings

N

0.25 0 0.25 0.5 Miles

The DMA is the 24th largest metropolitan area in the country. The median age in the city of Denver is 33.3 years, compared to the U.S. median age of 33.7. The city continues to grow in racial diversity; in the second quarter of 1995, approximately 80 percent of the population was Caucasian, 12 percent of Hispanic origin, 5 percent African American, 2 percent Asian, and 1 percent Native American (Denver Metro Chamber of Commerce, 1995).

The DRCOG includes Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, Gilpin, and Jefferson counties. This planning area, which is representative of the DMA, had a 1995 estimated population of over 2 million people with an average annual growth rate of over 2 percent. Table 9 shows population and projected population for the region from 1980 to 2015. Table 10 shows percentage changes and projected percentage changes in population for the region from 1980 to 2015. The ROI is anticipated to add approximately 543,000 people from 1995 to 2015 (DRCOG, 1995). The greatest population growth is anticipated in the suburban areas.

Table 9: Actual and Projected Study Area Populations, 1980-2015

	1980	1990	1995	2000	2015
State of Colorado	2,908,036	3,310,849	3,720,512	4,018,309	5,048,982
COUNTY:					
Adams	244,839	265,038	292,050	316,525	419,625
Arapahoe	293,612	391,511	434,925	465,400	557,900
Boulder	189,625	225,339	259,350	271,500	303,325
Clear Creek	7,308	7,619	8,175	8,575	12,125
Denver	491,119	467,610	486,350	503,875	513,500
Douglas	25,123	60,391	97,775	122,275	217,625
Gilpin	2,441	3,070	3,750	4,000	5,625
Jefferson	374,107	438,430	484,800	515,275	621,950
8 County Total	1,628,213	1,859,008	2,069,025	2,203,700	2,612,050
MUNICIPALITY:					
Lakewood	113,808	126,481	135,500	139,500	156,100

Source: Denver Regional Council of Governments, Denver Chamber of Commerce.

Historic growth statistics, presented in Tables 9 and 10, show that most of the counties in the DMA experienced a faster average annual growth rate from 1990 to 1995 than from 1980 to 1990. The only county with a lower annual average growth rate from 1990 to 1995 than from 1980 to 1990 was Arapahoe County (2.1 percent compared to 2.9 percent) (DRCOG, 1995). Areas with the largest percentage increases include Douglas and Gilpin counties, which suggest significant growth in the southern DMA, and to the west. Population growth in the older, more developed areas is increasing at a slower rate than the outlying areas. Parts of Denver, Jefferson, Adams, and Arapahoe counties have well-established communities and less available space for new development. Most of the growth in population in the urban areas is related to infill and redevelopment activities.

Overall, Colorado's economy is expected to grow at about the national economic pace for the near future, which suggests an increase in population. The increase is not expected to be at the same rate experienced between 1991 and 1994. Since 1991, Colorado has experienced positive net migration compared to the decline in population growth between 1986 and 1990. Migration growth has been

particularly strong during the period 1992 to 1994 (University of Colorado, 1994). For the near term, population growth will remain relatively steady at around 2.0 percent for the DMA.

The City of Lakewood has shown steady growth throughout the period, with an average annual increase of 1.1 percent between 1980 and 1990 (12,673 people) and 1.4 percent between 1990 and 1995 (9,019 people). Lakewood's population growth rate is likely to remain fairly stable for the near future. Dramatic growth is not expected based on the limited amount of land available within the city limits. Total land available for development within Lakewood is between 800 and 1,000 acres (Gray, 1995). The current estimated population of Lakewood is 135,500, with 57,660 total households. From 1990 to 1995, total households have increased by 9.5 percent, an average annual increase of 1.8 percent.

Table 10: Actual and Projected Study Area Population Changes, 1980-2015

	Percent Increase 1980-90	Avg. Ann. Increase 1980-90	Percent Increase 1990-95	Avg. Ann. Increase 1990-95	Percent Increase 1995-2015
State of Colorado	13.9%	n/a	12.4%	n/a	35.7%
COUNTY:					
Adams	8.2 %	0.8 %	10.2 %	2.0 %	43.7 %
Arapahoe	33.3 %	2.9 %	11.1 %	2.1 %	19.2 %
Boulder	18.8 %	1.7 %	15.1 %	2.9 %	17.0 %
Clear Creek	4.3 %	0.3 %	7.3 %	1.4 %	48.3 %
Denver	(- 4.8 %)	(- 0.5 %)	4.1 %	0.8 %	5.6 %
Douglas	140.4 %	9.2 %	61.9 %	10.1 %	122.6 %
Gilpin	25.8 %	2.3 %	82.4 %	12.7 %	40.6 %
Jefferson	17.2 %	1.6 %	10.5 %	2.0 %	28.3 %
8 County Total	14.2 %	1.3 %	11.3 %	2.2 %	26.4 %
MUNICIPALITY:					
Lakewood	11.1 %	1.1 %	7.1 %	1.4 %	15.2 %

n/a = Not Available

Source: Denver Regional Council of Governments, Denver Chamber of Commerce.

3.4.2 Employment and Income

The employment and household income levels of communities within commuting distance of the DFC have the potential to be affected by changes in development and use of the DFC associated with the implementation of the Proposed Action. Therefore, the ROI for this resource includes Jefferson County and other counties in the DMA (Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, and Gilpin counties). The DMA defines the area where the Proposed Action is anticipated to have the potential to draw local (daily commuting) labor force. A profile of economic characteristics was developed using secondary data sources. Secondary data was utilized for the development of the *Demographic/Economic Inventory and Analysis* report, a component of the DFC master site plan process. The applicable regulatory references for this resource are the CEQ Regulations on Implementing NEPA (40 CFR Part 1500-1508).

Employment and income information in this section is described for the DMA and includes all counties within the ROI, and for the City of Lakewood.

DMA. The DMA is home to 49 percent of the state's population and employs 54 percent of its residents. Therefore, the DMA's economy largely dictates statewide economic activity. The region serves as a regional trade and distribution center for the surrounding communities and mountain region states; thus, services and trade are important components of the local economy. In 1995, services accounted for the largest percentage of all jobs (29.8 percent), with business services as the most important component. Wholesale and retail trade provide an estimated 24.4 percent of the area's jobs, followed by government (14.6 percent) and manufacturing (10.4 percent). Since 1980, the service sector's role in the economy has expanded dramatically, while manufacturing and mining have declined. Recent reductions in employment at Federal agencies are represented in the 1994 and 1995 statistics in Table 11. This table shows employment numbers for each economic sector in 1980, 1990, and 1995. In this table, employment is reported by place of work, rather than by place of residence. Jefferson County is the most industrialized in the area, with manufacturing representing over 26 percent of the county's employment in 1995. Manufacturing employment declined significantly through the 1990s, dropping at a 4.5 percent annualized rate due to cutbacks in defense expenditures (Colorado Legislative Council, 1995). Other strong sectors in the Jefferson County economy include Trade (26.4 percent), Services (25.3 percent), and Government (16.1 percent).

Employment in the study area has generally increased throughout the period. Counties showing the most rapid increases in employment levels include Gilpin, Douglas, Arapahoe, Boulder, and Clear Creek. Growth trends within these counties are expected to continue. Table 12 shows study area employment and employment forecast for each county in the planning area and the City of Lakewood. Within the metropolitan area, individual counties vary greatly. Denver, Douglas, and Arapahoe counties are the most service-oriented. Nearly one-third of the DMA's finance, insurance, and real estate employment is in Arapahoe County.

Table 13, shows employment numbers for economic sectors from 1980, 1990, and 1994 and the percentage change over time for the DMA and Jefferson County. In this table, employment is reported by place of work rather than by place of residence. The economy within the DMA is typically an urban economy with the exception of Clear Creek and Gilpin counties, which are mountain areas that depend primarily on mining and tourism. In-migration population in the past five years and large infrastructure projects including the Denver International Airport (DIA), Coors Field, Elitch Gardens, and the Denver Library expansion have created significant job growth in the past four years. This rate of job growth is likely to slow in the next several years, although there are still a number of large infrastructure projects planned or currently under construction in the DMA: Pepsi Center ($132 million); Children's Hospital expansion ($37 million); Inter-State Highway 470 ($654 million); University Hospital expansion ($18 million); and Sports and Health Center ($32.5 million) (Colorado Legislative Council, 1995).

Table 11: Employment by Sector

DENVER METROPOLITAN AREA	1980	1990	1994	1995	1995 Percent of Total	Percent Change 1990-95
Total Industries	779,300	958,200	1,081,600	1,128,700	100%	17.8%
Mining	20,100	10,900	8,400	7,600	0.7%	-30.3%
Construction	45,200	36,700	56,300	60,200[4]	5.3 %	64.0%
Manufacturing	124,300	124,900	119,200	116,900	10.4%	-6.4%
TCPU[1]	55,500	72,400	78,500	86,900.	7.7%	20.0%
Trade	192,400	231,000	259,600	275,800	24.4%	19.4%
FIRE[2]	54,000	68,800	78,500	81,900	7.3%	19.4%
Service Industries[3]	168,600	235,100	316,400	336,400	29.8%	43.1%
Government	138,200	152,400	164,800	164,900	14.6%	8.2%
Federal	34,000	36,800	38,100	35,400	3.1%	-3.8%
State	32,400	36,600	39,400	39,900	3.5%	9.0%
Local	71,800	79,000	87,300	89,600	7.9%	13.4%
JEFFERSON COUNTY					**1995 Percent of Total**	**Percent Change 1990-95**
Total Industries	116,932	162,920	180,944	187,519	100%	15.1%
Mining	2,450	1,116	641	596	0.3%	-46.6%
Construction	9,874	7,261	10,729	11,479	6.1%	58.1%
Manufacturing	23,411	35,339	29,420	25,408	26.8%	-28.1%
TCPU[1]	2,473	3,730	4,494	9,492	5.0%	154.5%
Trade	27,330	41,832	47,832	50,244	26.4%	20.1%
FIRE[2]	5,226	8,286	10,474	10,435	5.6%	25.9%
Service Industries[3]	19,355	35,910	44,615	47,403	25.3%	32.0%
Government	25,780	27,941	30,750	30,282	16.1%	8.4%
Federal	9,605	10,511	11,469	10,424	5.5%	-0.8%
State	2,137	2,951	3,159	3,177	1.7%	7.7%
Local	14,038	14,479	16,122	16,681	8.9%	15.2%
Agriculture, Forestry, Fishery, and Other	1,223	1,505	1,989	2,155	1.1%	43.2%

[1] Transportation, Communications, Public Utilities
[2] Finance, Insurance, Real Estate
[3] Includes agricultural services and firms not elsewhere classified
[4] Includes Mining sector from Boulder County

Source: Colorado Department of Labor and Employment, 1995.

Both labor and employment increased in the DMA and Jefferson County for the period from 1990 to 1995, as shown in Table 13. Labor force statistics reflect employment by residence, unlike employment sector statistics, which reflect employment by work location.

The labor force in the DMA increased 15.8 percent from 1990 to 1995. Employment increased 16.8 percent, and unemployment declined by 7.6 percent. The unemployment rate has fluctuated somewhat, with a high of 5.2 percent in 1980 and a low of 3.5 percent in 1995. Jefferson County's labor force increased by 36,206 people from 1990 to 1995 (14.1 percent), and unemployment dropped

to a low of 3.0 percent in 1995. Four percent unemployment is considered full employment; therefore, Jefferson County has sustained full employment throughout the period from 1990 to 1995 (Colorado Department of Labor, 1995).

Table 12: Actual and Projected Study Area Employment 1980-2015

	Actual			Projected		Percent Change '80-90	Average Annual Change '80-90	Percent Change '90-95	Average Annual Change '90-95	Projected Percent Change '95-2015
	1980	1990	1995	2000	2015					
COUNTY:										
Adams	66,509	108,085	125,772	140,375	207,625	62.5%	5.0%	16.4%	3.1%	65.1%
Arapahoe	120,707	194,666	242,972	262,500	297,950	61.3%	4.9%	24.8%	4.5%	22.6%
Boulder	89,760	128,439	159,035	168,550	185,450	43.1%	3.7%	23.8%	4.4%	16.6%
Clear Creek	4,381	2,684	3,300	3,400	3,700	-38.7%	-4.8%	23.0%	4.2%	12.1%
Denver	428,834	419,332	442,335	471,800	547,675	-2.3%	-0.2%	5.5%	1.1%	23.8%
Douglas	6,083	16,270	27,314	38,875	64,325	167.5%	10.3%	67.9%	10.9%	135.5%
Gilpin	568	524	5,500	6,000	6,300	-7.8%	-0.8%	949.6%	60.0%	14.5%
Jefferson	137,962	184,653	207,174	221,800	247,325	33.8%	3.0%	12.2%	2.3%	19.4%
TOTAL	854,804	1,054,653	1,213,402	1,313,300	1,560,350	23.4%	2.1%	15.1%	2.8%	28.6%
Municipality:[1]										
Lakewood	68,263	72,795	79,915	n/a	n/a	6.6%	0.7%	9.8%	2.4%	n/a

1 - The incorporated boundary of the City of Lakewood. 1995 figure is actually 1994
2 - RSA - Regional Statistical Area, includes employment outside the identified incorporated area.
n/a - not available

Source: Denver Regional Council of Governments, Colorado Department of Labor and Employment, Labor Market Information, March 1995.

Table 13: Labor Force Summary - 1980, 1990, and 1995

	1980	1990	1995	Percent Change 1990-95
DENVER METROPOLITAN AREA:				
Total Labor Force	888,945	913,035	1,056,990	15.8%
Employment	842,933	873,575	1,020,513	16.8%
Unemployment	46,012	39,460	36,477	-7.6%
Unemployment Rate	5.2%	4.3%	3.5%	-0.8%
JEFFERSON COUNTY:				
Total Labor Force	201,361	256,273	292,479	14.1%
Employment	192,459	247,046	283,837	14.9%
Unemployment	8,902	9,227	8,642	-6.3%
Unemployment Rate	4.4%	3.6%	3.0%	-0.6%

Source: Colorado Department of Labor and Employment, Labor Market Information 1995 (figures determined by place of residence).

The average annual wage in Jefferson County in 1994 was $27,909 (1995 averages are not yet available). The highest average wages occurred in the Mining and Manufacturing sectors - $57,044 and $42,932, respectively. The lowest wages occurred in the Retail Trade sector, $14,270 (Colorado Department of Labor, 1995).

City of Lakewood. Lakewood is currently the fourth largest city in Colorado with an estimated 1995 population of 135,500. Between 1990 and 1995, employment grew at an average annual rate of 2.4

percent. The incorporated City of Lakewood is a mixture of rural residential, suburban residential, office, high-tech industrial parks, and retail, including large retail centers such the Villa Italia and Westland Shopping centers, and revitalized retail areas such as the West Colfax corridor. The DFC is located in the center of the city. Table 14 provides a list of the top 20 major employers within the City of Lakewood in 1995.

Table 14: Major Employers in the City of Lakewood, 1995

Company	Product/Service	Numbers of Employees
Jefferson County R-1 Schools	Public schools K-12	10,700
Denver Federal Center	Federal government offices	5,173 *
COBE Laboratories	Medical equipment	1,100
King Scoopers	Retail grocer	970
Merril Lynch	Financial services	800
City of Lakewood	City government	721
Hotels (10)	Accommodations	500
Red Rocks Community College	2-Year Community College	550
JEFFCO Community Center	Serves people with disabilities	500
Footills Park & Rec. Center	Recreation center	475
First Data Corporation	Financial consumer services	450
KN Energy	Natural gas pipeline headquarters	340
Casa Bonita	Family restaurant	340
Sunshine Building Maintenance	Building maintenance	350
KMart	Discount Department Store	345
Kaiser Permanente	Health Maintenance Clinic	340
Electronic Data Systems	Computer Programming	340
Joslins	Department Store	325
Safeway	Retail Grocer	316
Walmart Department Store	Department Store	300

Sources: City of Lakewood, 1995.
*General Services Administration, *Draft Master Site Plan.* 1996.

3.4.3 Housing

Changes in employment levels at the DFC associated with the implementation of the Proposed Action have the potential to affect the housing requirements of communities within commuting distance of DFC. Therefore, the ROI for this resource includes Jefferson County and other counties in the DMA (Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, and Gilpin counties). The DMA defines the area where changes in employment levels associated with the Proposed Action have the potential to influence local housing markets. A profile of local community housing characteristics and trends was developed using secondary data sources. The applicable regulatory references for this resource are the Environmental Quality Regulations on Implementing NEPA (40 CFR Part 1500-1508).

Within the City of Lakewood the number of housing units has increased steadily over the past 25 years as shown in Table 15. Of the 55,678 housing units recorded in the 1990 Census for Lakewood, 51,657 units were identified as being occupied. Approximately 60.5 percent of the occupied-units are owner-occupied (31,250), and the remainder of the units are renter occupied (20,407).

Table 15: Housing Units in Lakewood and Jefferson County

	1970	1980	1990
City of Lakewood			
Housing Units	28,201	43,826	55,678
Population	92,743	113,808	126,481

Source: Lakewood 25th Birthday Commission, 1994.

Housing information from the 1990 Census data for eight counties within the ROI is provided in Table 16. The 1990 Census data indicates that the greatest concentration of people and housing units within the ROI is within Denver, Jefferson, and Arapahoe counties (from greatest to least, respectively). Except for Denver County, the majority of the housing units within the ROI are owner-occupied as opposed to renter-occupied. In Jefferson County, the 1990 Census identified a total of 178,611 housing units. Jefferson County shows the highest percentage of owner-occupied housing units (70.1 percent) of the eight ROI counties.

Table 16: 1990 Census Data - Housing Information within the DMA

County	Housing Units	Population	Owner Occupied	Renter Occupied	Total Occupied Households
Adams	106,947	265,038	63,129	33,224	96,353
Arapahoe	168,665	391,511	98,376	56,334	154,710
Boulder	94,621	225,339	54,031	34,371	88,402
Clear Creek	4,811	7,619	2,268	885	3,153
Denver	239,636	467,610	103,764	107,188	210,952
Douglas	22,291	60,391	17,756	3,088	20,844
Gilpin	2,438	3,070	988	320	1,308
Jefferson	178,611	438,430	116,830	49,715	166,545

Source: Denver Regional Council of Government, 1992.

3.4.4 Community Services

Changes in employment levels at the DFC associated with the implementation of the Proposed Action have the potential to affect the types and levels of community services provided to residents of communities within commuting distance of the DFC. Therefore, the ROI for this resource includes Jefferson County and other counties in the DMA (Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, and Gilpin counties). The DMA defines the area where governmental jurisdictions are anticipated to receive direct population changes and/or community services demands as a result of the Proposed Action. A profile of local community services was developed using secondary data sources. Secondary data includes annual reports of various agencies and departments, local government budgets, and applicable publications and reports. Since local jurisdictions provide public services, changes in populations were considered the single most important determinant of effects on service provision. The applicable regulatory references for this resource are the CEQ Regulations on Implementing NEPA (40 CFR Part 1500-1508). The community services described in this section include fire protection, police protection, medical facilities, and educational facilities.

Fire Protection. The West Metro Fire Protection District, also referred to as the West Metro Fire/Rescue (WMFR), provides fire protection services for nearly all areas within the City of Lakewood. The WMFR was established January 1, 1995, with the consolidation of the Lakewood and Bancroft Fire Districts. The WMFR is a Special District of Colorado and is not affiliated with any city government or municipality. It is governed by a board of seven publicly elected officials and funded largely by a property tax mill levy. In 1995, the WMFR operated a total of 13 stations, composed of 162 personnel and 22 fire/rescue vehicles. The DFC contracts with the WMFR for fire fighting and emergency response services. The DFC is located within the first-in response area for the WMFR's Station Number 3, located at 95 Garrison Street, Lakewood. Station Number 3 is staffed by 11 personnel and maintains one engine and one tower vehicle. A separate water line system has been constructed for fire protection purposes for all major buildings at the DFC. In addition, a separate fire alarm system has been placed in the underground communication conduits. Refer to Figure 13 for locations of fire protection infrastructure at the DFC.

Police Protection. The Lakewood Police Department was established along with the creation of the City of Lakewood in 1969. Since that time, the department has earned national recognition for excellence. Lakewood was the first police department in the nation to require a four-year college degree as an entrance requirement for sworn personnel. In 1986 the department became only the 24th law enforcement agency in the country to become nationally accredited. To achieve that status, the department was required to meet performance and operating standards fixed by the Commission of Accreditation for Law Enforcement Agencies. The department was reaccredited in 1991 and continues to uphold a set of over 900 stringent national standards. The Lakewood Police Department consists of 328 employees composed of 218 sworn employees (including 17 recruits graduating in October 1996) and 110 nonsworn civilian employees. Sworn employees are composed of patrol officers, traffic specialist detectives, vice/narcotics investigators, and other special assignment officers. In addition, the department is supported by 45 civilian volunteers.

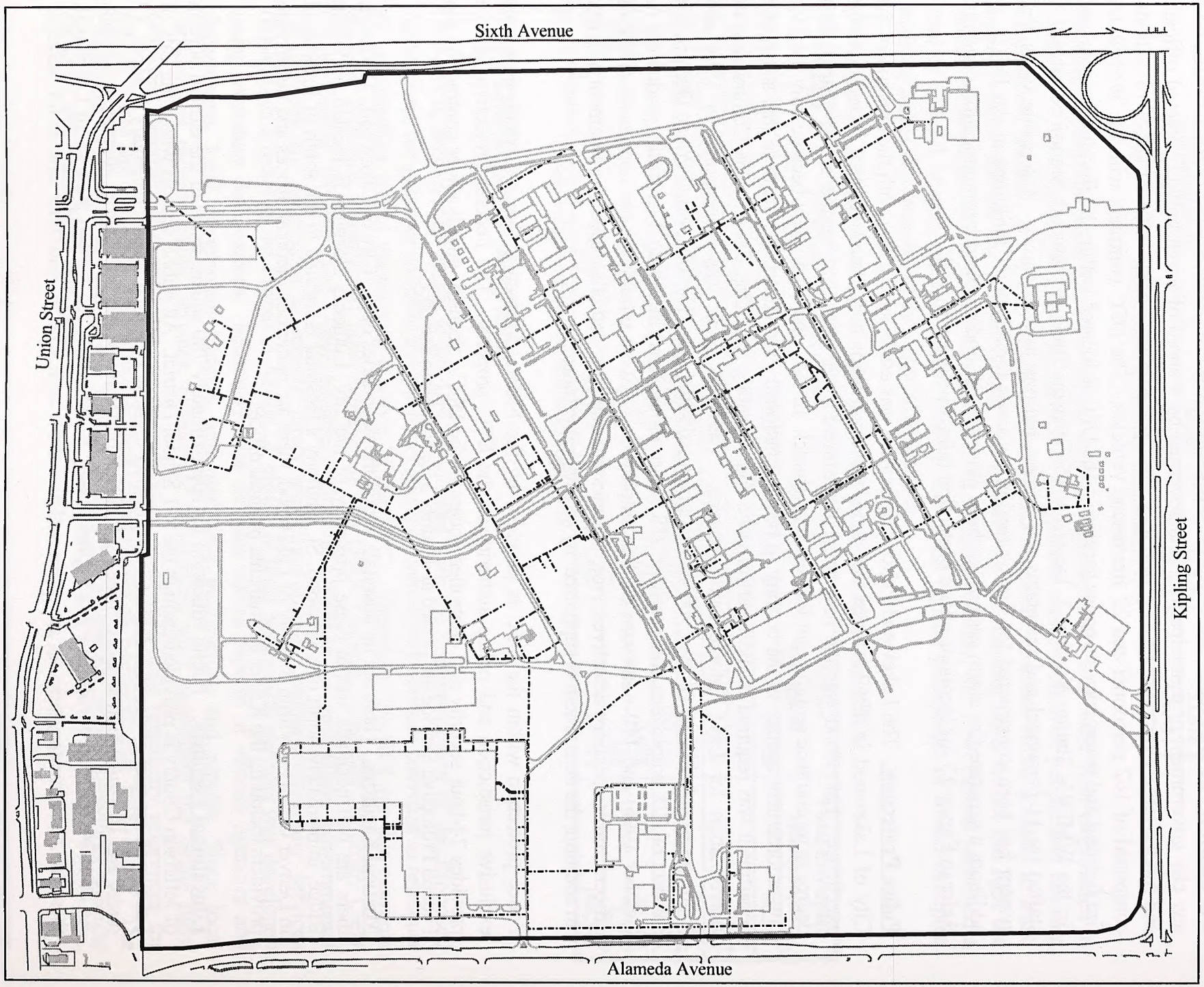
Police protection within the DFC is provided by the Federal Protective Service, which maintains exclusive jurisdiction and police authority on the DFC property. The Federal Protective Service provides 24-hour security and controlled access to the DFC. Security guards under contract by the Federal Protective Service are posted at security access gates to the DFC.

Medical Facilities. There are no hospitals within the boundaries of the City of Lakewood. However, there are two hospitals within close proximity of the city. Lutheran Hospital is located in Wheat Ridge, immediately north of Lakewood. St. Anthony's Hospital is located to the south of Lakewood in Denver County. Within the City of Lakewood, there are numerous medical offices and health care providers including the Kaiser Permanente medical offices.

Educational Facilities. Public education for approximately 780 square miles of the eastern portion of Jefferson County is provided through the R-1 School District. All public schools within the City of Lakewood are part of the R-1 district. This district consists of a total of 83 elementary schools, 17 junior and 14 senior high schools, three adult education facilities, and four district alternative schools. As of 1994, the total enrollment was approximately 83,000 students. Within the City of Lakewood, there are 22 elementary schools, six junior and five senior high schools, and three schools for students

Fire Protection Infrastructure at the DFC

Figure 13



- Streets
- Fire Suppression Lines
- DFC Boundary
- On-Site Buildings
- Off-Site Buildings

N

0.25 0 0.25 0.5 Miles

with special needs. In addition, Lakewood is the location of the Jefferson County Open School, which is available for pupils from kindergarten through high school desiring an emphasis on self-directed learning in and out of the school setting There are also three parochial schools in Lakewood for elementary school students. For higher education, there are 13 four-year colleges and eight two-year colleges within a 45-minute driving radius of Lakewood (City of Lakewood, 1995, Lakewood 25th Birthday Commission, 1994).

3.4.5 Recreation Resources

Changes in land use and employment levels at the DFC associated with the implementation of the Proposed Action have the potential to affect the demand for recreational resources by the DFC employees. In addition, the Proposed Action has the potential to affect the demand for recreational resources by employees and their families in communities within commuting distance of the DFC. Therefore, the ROI for this resource includes Jefferson County and other counties in the DMA (Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, and Gilpin counties). A profile of the recreation resources within the DFC, the City of Lakewood, and Jefferson County was developed using primary and secondary data sources. This assessment is limited to the recreational resources within these three areas, as they have the greatest potential to be affected by the Proposed Action and are generally representative of typical recreational resources within the DMA. Primary data sources include information gathered and confirmed during on-site reconnaissance at the DFC. Secondary data include existing plans, maps, and publications. The applicable regulatory references for this resource are the CEQ Regulations on Implementing NEPA (40 CFR Part 1500-1508).

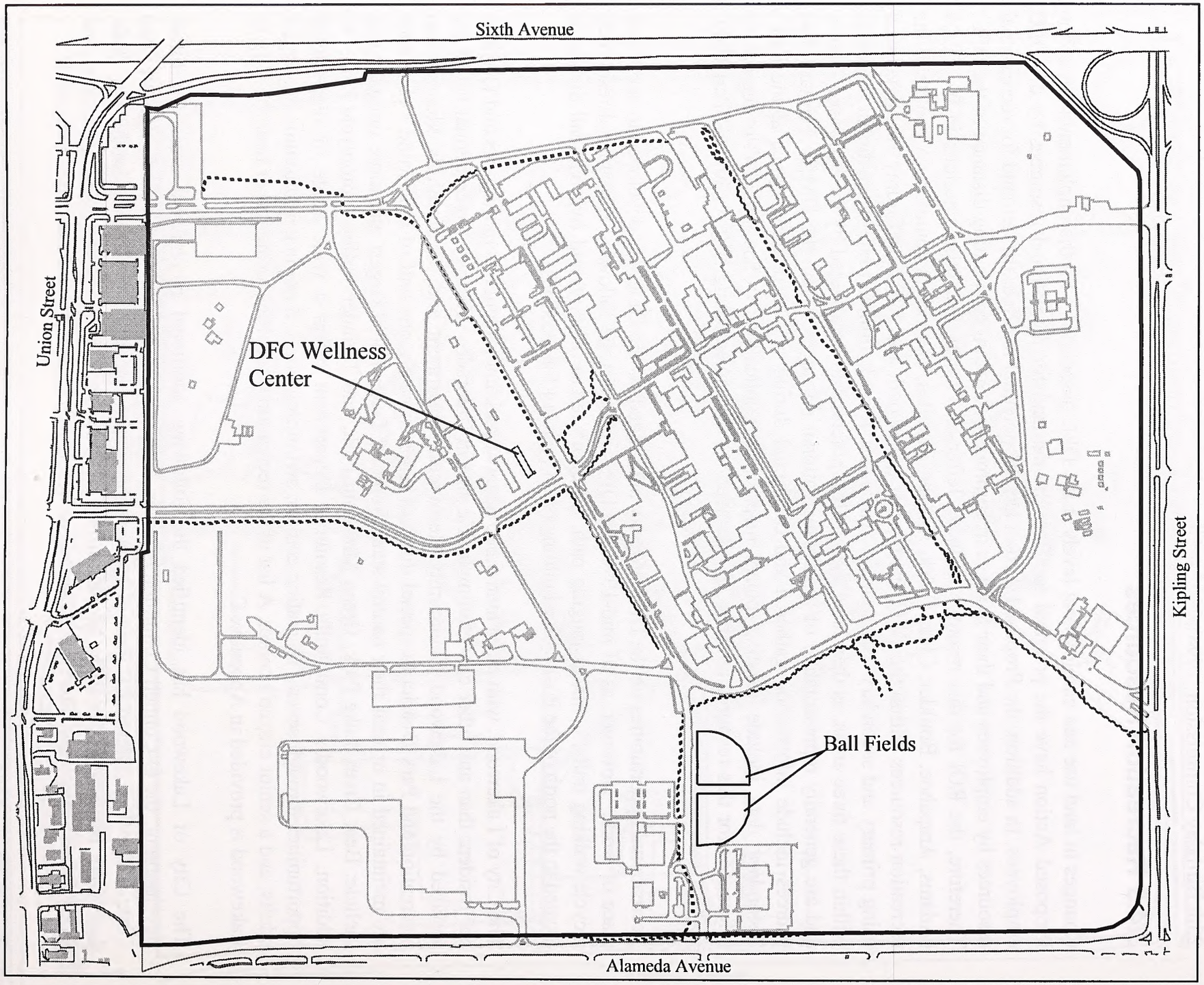
Recreational opportunities on the DFC property are limited, as the DFC was developed to serve as a place of work. However, as of mid-1996, the DFC maintains the following recreational resources: bicycle/walking trails, a fitness jogging path, a health/exercise facility, and two baseball diamonds located to the north of the Post Office building (see Figure 14 for locations).

The City of Lakewood, with more than 6,500 acres of parkland, maintains more parks and facilities per resident than any other city of comparable size in Colorado. The city's recreational needs are serviced by the Lakewood Community Resources Department and the Foothills Metropolitan Recreation and Park District (a special district). Approximately one-half of Lakewood's parklands are maintained in or near their natural state. Some of Lakewood's largest and more unique parks include: Bear Creek Lake Park, Green Mountain Park, and Thunder Valley Motorcycle Park. In addition, Lakewood's Community Resources Department offers a wide range of recreational opportunities through several recreation centers, swimming pools, a marina, a museum, classes for adults, and a senior citizen's center. A list of the recreational facilities located in or near the City of Lakewood is provided in Appendix C.

The City of Lakewood has identified the following additional recreational areas for future development: the O'Connell Community Center; a Shooting Range/Sportcycle Park; Balsam Pond Park; Edgewood Memorial Park; Glennon Dal Park; Heritage Hill Park; Hutchinson Park; Loveland Trail; McNabb Park; Mountainside Park; Peterson Park; Sloans Lake Drainway; and Cody Street Greenway. The city's Community Resources Department also maintains a city-wide

Recreational Opportunities at the DFC

Figure 14



trail system consisting of bike routes, bike lanes, bikeways, greenway, multi-use trail, and horse trails. As of 1992, Lakewood had developed over 24 miles of major trails throughout the city. This network includes the Kipling Parkway trail, which extends five miles to the south of the DFC along Kipling Street, and the Alameda Parkway Trail, a six-mile trail that passes to south of the DFC along Alameda Avenue. Additional components of the trail system are also available within the vicinity of the DFC to provide further recreational opportunities to employees and visitors at the DFC.

The City of Lakewood has identified the following additional recreational areas for future development: the O'Connell Community Center; a Shooting Range/Sportcycle Park; Balsam Pond Park; Edgewood Memorial Park; Glennon Dal Park; Heritage Hill Park; Hutchinson Park; Loveland Trail; McNabb Park; Mountainside Park; Peterson Park; Sloans Lake Drainway; and Cody Street Greenway. The city's Community Resources Department also maintains a city-wide trail system consisting of bike routes, bike lanes, bikeways, greenway, multi-use trail, and horse trails. As of 1992, Lakewood had developed over 24 miles of major trails throughout the city. This network includes the Kipling Parkway trail, which extends five miles to the south of the DFC along Kipling Street, and the Alameda Parkway Trail, a six-mile trail that passes to south of the DFC along Alameda Avenue. Additional components of the trail system are also available within the vicinity of the DFC to provide further recreational opportunities to employees and visitors at the DFC.

In addition to the recreational opportunities available through the City of Lakewood, numerous other outdoor recreational opportunities are available on Jefferson County's network of open space areas and trails. The county maintains an Open Space Program that has been established since 1972. The program is funded by a one-half percentage sales tax on retail sales in Jefferson County. As stated in its original resolution, the open space funds are to be used "exclusively for the planning for, developing necessary access to, acquisition, maintenance, and preservation of open space real property for the use and benefit of the public." This resolution was amended in 1980 to allow for the use of funds for construction, acquisition, and maintenance of park and recreational capital improvements. A population-based formula is used to allocate approximately one-third of open space funds to incorporated areas of the county, and approximately two-thirds for use at the county level. Table 17 summarizes the existing and planned amount of open space in the county as described in the 1989 Open Space Master Plan.

Table 17: Jefferson County Open Space Acquisition and Development

Type	Unit	1989		Planned- Year 2010	
		Undeveloped	Developed	Undeveloped	Developed
Mountain Open Space	Acres	2,200	10,112	2,540-4,127	11,426
Conservation Easements	Acres	0	0	5,100-10,200	0
Plains Open Space	Acres	750	973	1,489-3,076	1,866
Mountain Trails	Miles	0	9	79	48
Plains Trails	Miles	0	18	33	45

Source: BRW, Inc., 1989.

3.4.6 Land Use

Implementation of the Proposed Action has the potential to involve development activities that may affect existing land uses within the DFC property and the surrounding City of Lakewood areas. In addition, former land use and operational activities at the DFC are known or suspected to have resulted in spills and releases of hazardous materials to the environment. Implementation of the Proposed Action has the potential to involve development activities that may disturb existing contamination sources within the DFC as well as off-site areas connected to the DFC through surface and/or groundwater. Therefore, the ROI for this resource includes: the DFC property; the City of Lakewood; the off-site downstream portion of McIntyre Gulch (until its confluence with the South Platte River); the off-site downstream portion of the Agricultural Ditch (until Wolcott Lake); and areas within four miles down gradient (to the east) of the site boundary for groundwater migration (this radius may be expanded if impacts beyond a four-mile radius can be demonstrated).

A profile of existing on-site and surrounding land use was developed using primary and secondary data sources. Primary data sources include information gathered and confirmed during on-site reconnaissance at the DFC. Secondary data include existing land use plans, maps, surveys, and aerial photographs. Primary data sources include information gathered and confirmed during on-site reconnaissance at the DFC. The assessment of existing contamination at the DFC was also developed using primary and secondary data sources. Primary sources include on-site reconnaissance to gather and confirm information, and to conduct/monitor some surface and groundwater sampling. Secondary data include existing reports, documents, and studies.

The DFC is located within the City of Lakewood, but is not an incorporated part of the city. In 1987, Lakewood adopted a Comprehensive Plan. Current city zoning and land use regulations are consistent with the goals and policies outlined within the Comprehensive Plan. These city regulations, however, do not apply to the Federal property located at the DFC. Land use decisions within DFC are addressed by GSA, and are guided by the planning objectives adopted in the 1979 master site plan document. Close coordination between GSA and the City of Lakewood ensures that compatibility occurs between on-site land use decisions and the off-site areas for all major DFC land use decisions.

Existing land use patterns at the DFC have evolved from the sites initial development in the 1940s as the DOP. At that time, over 200 buildings were constructed on a central grid alignment. This area remains as the core area of the DFC with the concentration of facilities and uses. The majority of the buildings that exist today have been renovated and are used for research, laboratories, warehousing, storage, and administrative functions. Currently, there are over three million square feet of occupiable office, storage, laboratory, and other special-type space in over 90 buildings at the DFC. In addition, approximately 20 structures designed for testing and storage of ammunition remain on the perimeter of the core area. Most of these structures are slated to be demolished.

More recent development at the DFC has been generally located outside of the core area. This includes the construction of large storage facilities, functions that require exterior training space or additional security measures, or facilities that require a perimeter location for convenient public access (e.g. the U.S. Post Office). An example of a recently approved construction project is the

new 160,000 gsf USGS National Water Quality Laboratory to be located in the western portion of the DFC, just north of McIntyre Gulch and west of Building #94.

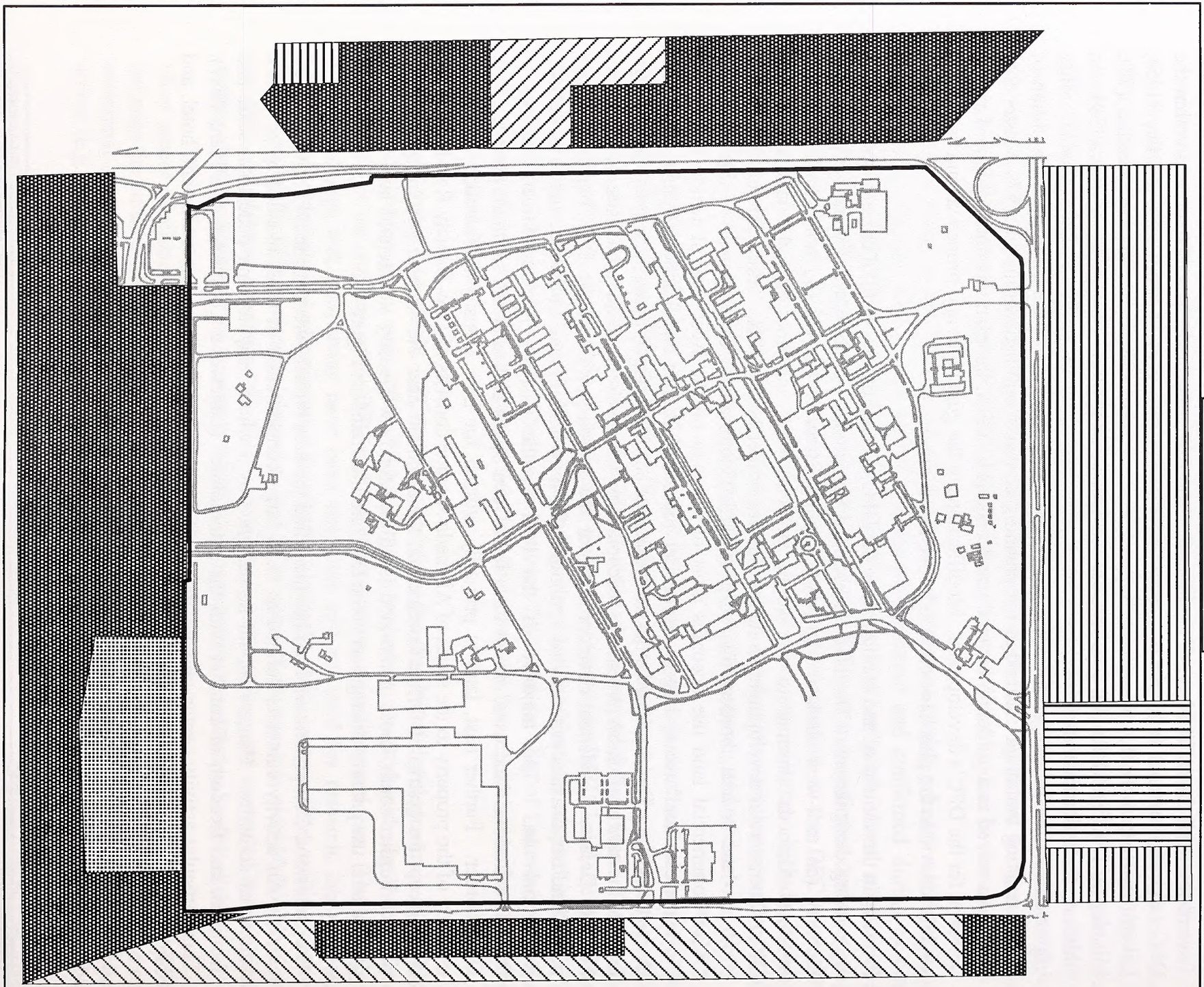
To provide for an orderly system of phased development based upon efficient and compatible land use, the 1979 Master Plan established 21 "parcels" at the DFC, each with an assigned land use. Toward this end, the 1979 Master Plan identified the following nine types of land uses within the DFC (and approximate total planned acres): Office/Business (35); Administrative/Office (145); Laboratory/Research (85); Warehouse/Support (112); GSA/Public Open Space/Recreation (78); Military/OCD (23); Malls (7); Roads (26); and Open Space/Flood Storage/Reservoirs (159). In addition, this plan recommended an overall site improvement program that included utility improvements, landscaping, walkways, street relocations, and the phasing out and demolition of certain existing buildings. Although the planning concepts outlined within the 1979 Master Site Plan have served as a guideline for land use decisions by GSA, the plan has not constituted a rigid blueprint for the DFC's development. Modifications to the guidelines and proposed land use layout established within the plan have occurred since its adoption.

Property in the vicinity of and contiguous to the DFC consists of a mixture of current land uses and city zoning designations. The DFC is bounded immediately to the north by the Sixth Avenue Freeway (an east-west six-lane highway), Kipling Street to the east (a north-south four-lane arterial), Alameda Avenue to the south (an east-west four-lane arterial), and a strip of Office/Commercial development along the western border of the DFC. Union Boulevard, a north-south six-lane arterial, borders this strip of Office/Commercial development to the west, and Office/Commercial land use occupies most of the area on the west side of Union Boulevard. Further west, land use is largely residential including Higher and Highest Density, Medium Density, and Low Density Residential developments and Parks/Open Space land uses. Most of the land to the north of Sixth Avenue is occupied by Office/Commercial land uses, except for a Medium Density Residential development near the central portion of the DFC border. Further north, land use consists primarily of a mixture of Public/Institutional, Industrial, and Low Density Residential use. The majority of the land to the east of Kipling Street consists of Public/Institutional land uses, except for a Park/Open Space area near the southern portion of the DFC border. Further east, land is primarily utilized for Low Density Residential uses. The majority of the property to the south of Alameda Avenue consists of Low Density Residential land uses, except for a strip of Office/Commercial development near the western portion of the DFC border. Further south, most of the land is utilized for Low Density Residential land uses. The general land use patterns contiguous to the DFC are illustrated on Figure 15.

The Lakewood Comprehensive Plan has identified the area directly west of the DFC as an activity center. An activity center is defined as "... a large concentration of uses, blended to provide a variety of activities. Centers should be designed as a whole, emphasizing pedestrian scale and facilities, and freedom of conflict with the automobile" (Lakewood Comprehensive Plan, 1987). This particular activity center calls for major office employment centers, entertainment, hotel, and high-density multi-family housing.

Land Use Patterns Contiguous to the DFC

Figure 15



On-Site Buildings
Off-Site Buildings

Office / Commercial
Industrial
Low Density Residential
Medium Density Residential
Parks / Open Space
Public / Institutional
Streets
Boundary

N

0.25 0 0.25 0.5 Miles

Various spills and releases of hazardous materials to the environment are known or suspected to have occurred at the DFC since 1941. As a result of prior and on-going land uses, contamination issues exist at the DFC. These prior land uses include munitions production during World War II, and subsequent storage and use of hazardous materials at the DFC by various Federal agencies. Although all locations and types of contamination are not known at this time, certain areas of the DFC have been identified as possessing potential contamination encumbrances, pending further site characterization. Contamination remediation at the DFC is beyond the scope of this EIS, and is currently being addressed as a separate issue by the GSA.

The GSA conducted a Site Characterization Study of the DFC that identified areas where potential contamination-related encumbrances exist pending further characterization. Based upon similarities in the potential contaminants, the media potentially contaminated, and past and present facility operations, the identified areas were grouped into Operable Units (OUs). The original screening of OUs was done by GSA and further defined in a Draft Preliminary Assessment (PA). Additional field testing/characterization is currently underway to further confirm the presence, type, and extent of any contamination at each OU. The approximate location of the identified OU areas is shown on Figure 16. The approximate OU boundaries are subject to change pending future site characterization and remediation activities.

In addition to the OUs identified in the Draft PA report, there are other areas of concern that relate to potential sources of contamination at the DFC. These include the floor drains and sumps in the buildings in existence at the time of the DOP which may have had potentially hazardous materials disposed of in them. Because many of these drains may have discharged into McIntyre Gulch and the Agricultural Ditch, they are also of concern. In addition, paint from the roof of Building #810 has also been peeling and is a potential source of contamination. All of these potential sources are known to GSA and are being investigated as a basis for identifying the proper remediation program.

3.4.7 Infrastructure/Utilities

Implementation of the Proposed Action has the potential to involve development activities that may affect the existing utilities and infrastructure within the DFC property and surrounding areas. The ROI for this resource includes the DFC and the City of Lakewood. The profile of utility services and infrastructure at the DFC and the surrounding areas was developed using primary and secondary data sources. Primary data sources include information gathered and confirmed during on-site reconnaissance at the DFC and information confirmed through interviews with DFC employees and representatives of utility service providers. Secondary data include applicable Federal and local government publications and reports. Primary and secondary data was utilized for the development of the *DFC Existing Site Conditions* report, a component of the DFC master site plan process. The applicable regulatory references for this resource are the Environmental Quality Regulations on Implementing NEPA (40 CFR Part 1500-1508).

As described in the 1987 City of Lakewood Comprehensive Plan, the city was largely developed prior to its incorporation in 1969. Subsequently, many of the mechanisms for providing services within its boundaries were already established. Services have generally been provided for discreet

Approximate Locations of Identified Operational Units (OUs) at the DFC

Figure 16



"special districts" that were created for each of the developed areas. The lack of coordination and planning involved through this system of multiple special districts led to problems with ensuring adequate services to all residents of Lakewood. To correct this situation, the 1987 Comprehensive Plan established a set of policies to provide complete and adequate services throughout the City of Lakewood (City of Lakewood, 1987).

Most of the water supply within Lakewood is provided by the Denver Water Board through 21 special districts. Because Lakewood has no direct control over its water provisions, it is seeking a means to secure a water supply to ensure adequate service for the demand of its anticipated future growth. Nearly all of the sanitary sewer service within the city is provided by the Metro Denver Sewage Disposal District Number One through 19 special districts. Drainage and flood control is provided by the city in conjunction with the Urban Drainage Flood Control District (UDFCD). Master plans for gulch improvements have been prepared for 10 of Lakewood's major drainageways. The city does not supply or regulate trash services; rather, numerous private operations throughout Lakewood provide these services. However, as stated in the Comprehensive Plan, the City of Lakewood's goal is to become the agency responsible for:

> ...providing, franchising, or coordinating service in order to ensure that Lakewood residents receive the best planned level of service at a reasonable cost. Such services should include, but not be limited to the following: water and sanitary sewer, fire protection, drainage and flood control, parks and recreation, and trash collection and disposal (City of Lakewood, 1987).

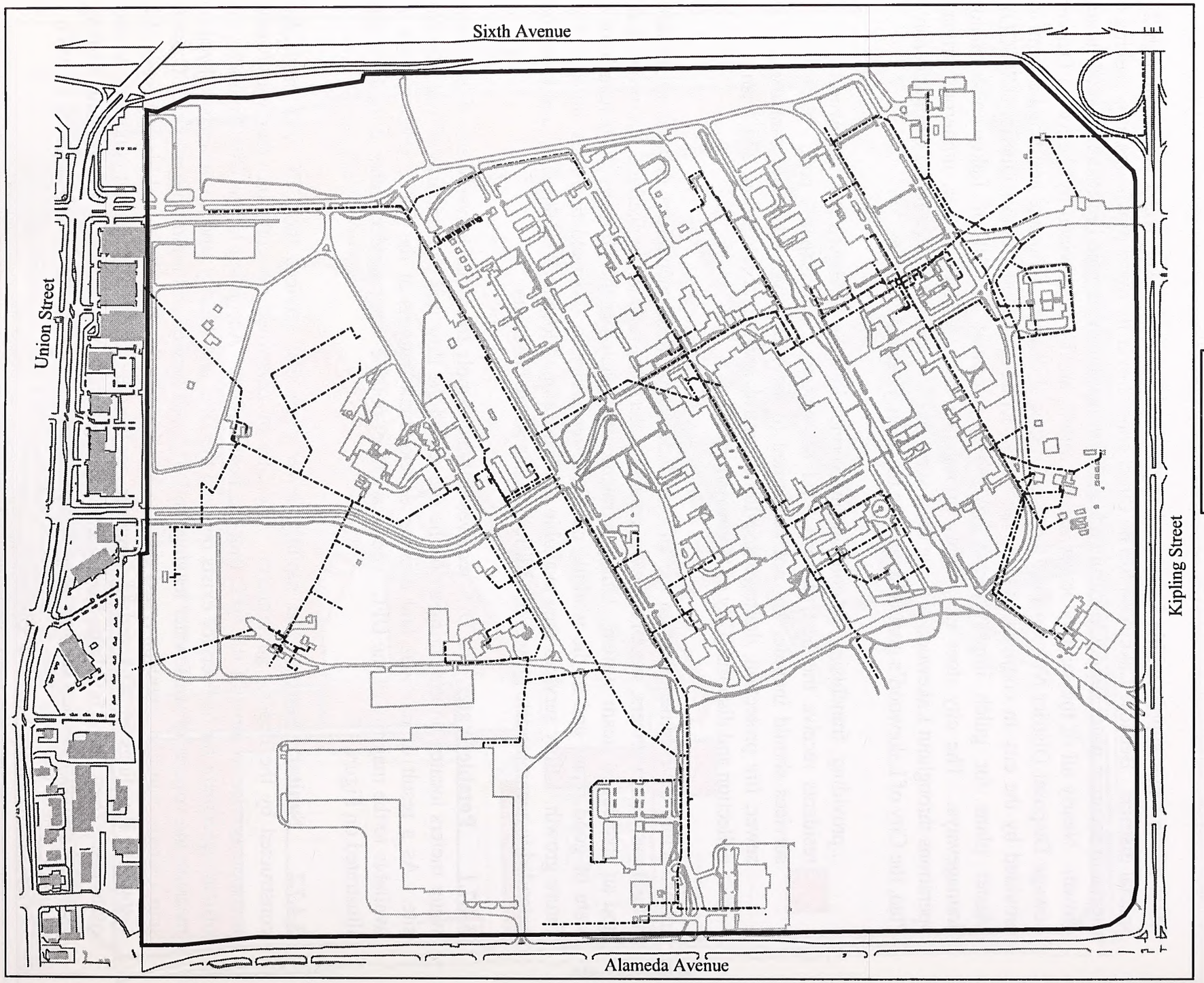
Infrastructure developments within the DFC include established independent systems to provide natural gas, storm sewers, sanitary sewers, potable water, electric/communications, fire protection, and an abandoned steam system. Utility infrastructure systems at the DFC are all generally in a state of good repair and in the working condition necessary to serve existing uses and possible future growth. Utility services area available at all developed locations of the DFC and could be extended to accommodate growth in additional areas where necessary.

3.4.7.1 Potable Water. The DFC receives its water supply from the Denver Water Board. Four water meters located on the perimeter of the site record the flow and consumption of water to the site. As a result of previous and existing development patterns at the DFC, water service is available to the majority of the DFC. The locations of potable water service mains at the DFC are illustrated on Figure 17.

3.4.7.2 Sanitary Sewers. The sanitary sewer plant that services the DFC was originally constructed by the Federal government. The City of Lakewood currently provides wastewater transport service to most of the DFC (not the Post Office). According to the City Engineer, no official agreement for this service exists between the DFC and the city, and no meter is utilized to measure the volume of wastewater leaving the DFC. All service and main lines at the DFC drain into a single common interceptor, and exit at a location near Kipling Street and Sixth Avenue (by Gate #2). Buildings #1, #1A and #3, however, are the only DFC buildings not connected to this main line. These three buildings have a direct service line to the sanitary sewer main on Kipling Street. A recommendation for increasing the current size of the Kipling Street main from 15 to 21

Potable Water System at the DFC

Figure 17



inches to accommodate a buildout of the DFC basin has been proposed by the city. This project, however, is classified as a "second tier" recommendation, and is not presently scheduled for implementation (City of Lakewood Wastewater Collection System Master Plan, 1989). All wastewater is transported to the Metro Water Reclamation District Treatment Plant in Commerce City, where it is eventually discharged into the South Platte River (Hutchinson, J., 1996).

Because the topographic gradient of the DFC slopes generally from the west-southwest to the northeast, an elevation difference of approximately 120 feet exists between the western and eastern boundaries. Except for McIntyre Gulch, the gradual slopes across the DFC do not present any development constraints for expansion of the sanitary sewers to other locations of the DFC. However, a lack of information identifying current flows in the system has created difficulties in reaching specific conclusions concerning the future capacity of the system.

Currently, the City of Lakewood and GSA are proposing the design and construction of a sanitary sewer metering and sampling station to be located at Gate #2. This will provide a mechanism for evaluating total flows for more accurate utility billing by the city. This station could also be used to determine total system flow characteristics on the site. The most recent evaluation of flows from the DFC occurred in July 1984 by the City of Lakewood. The highest peak recorded was 2.1 cubic feet per second. It is anticipated by the city that these flows have decreased since this last measurement based on their assessment of decreased activity at the DFC. All sewage transported off of the DFC will be routed into the proposed new sanitary sewer metering station. The locations of existing sanitary sewer mains at DFC are illustrated on Figure 18.

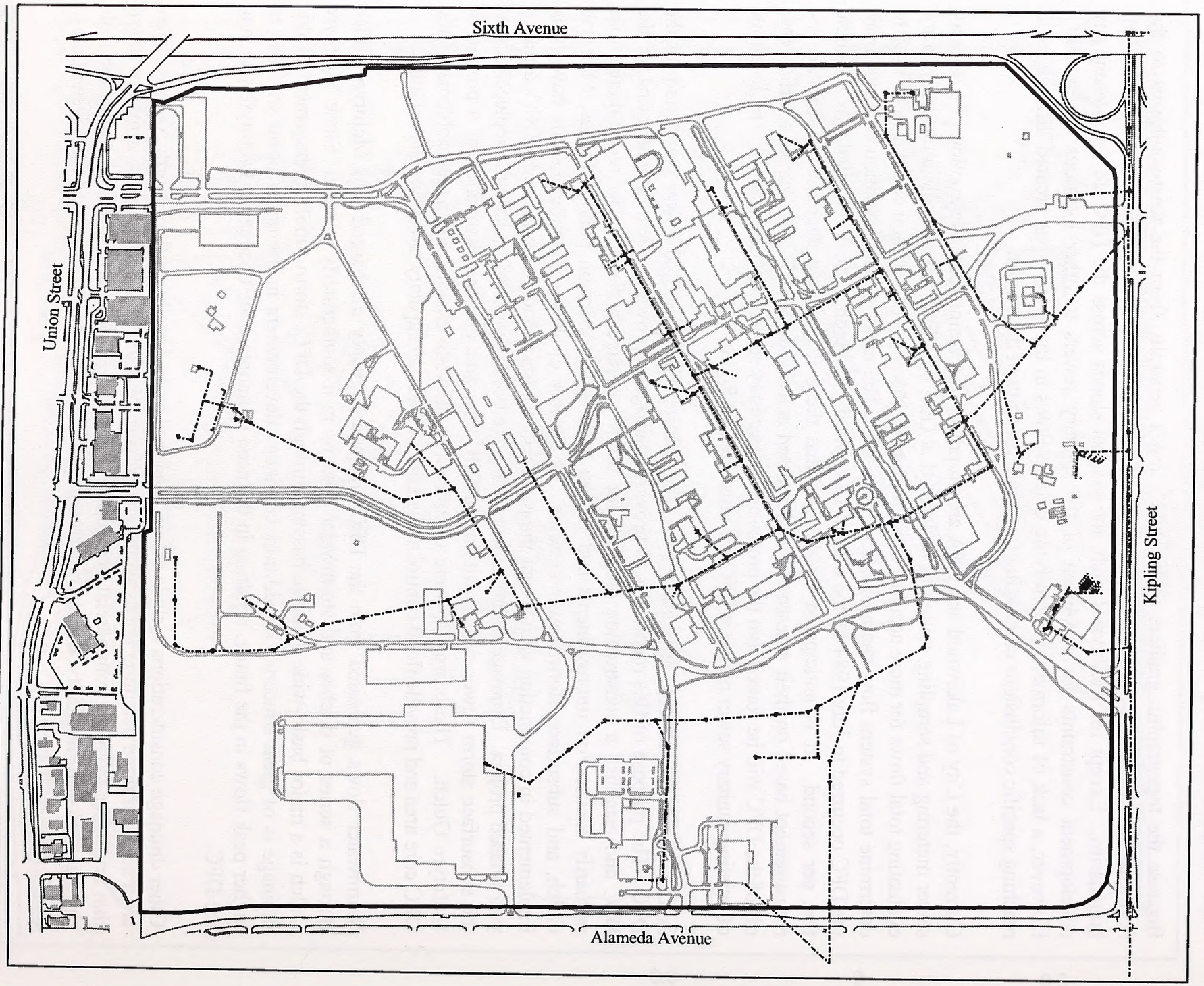
3.4.7.3 Storm Sewers. In January 1991, the "Master Drainage Study" was completed for the DFC. The purpose of this report was to provide drainage improvement recommendations for the DFC and establish a construction program for future drainage projects. The recommendations primarily focused on improvements and repairs to existing detention ponds, ditches, McIntyre Gulch, and subsurface storm sewer systems. A number of these recommendations have been implemented in conjunction with recent improvements to roads and grounds on the DFC, a multi-year phased project. Drainage improvements that have been completed include the replacement of the subsurface storm sewer system within the DFC core area and the channeling of a portion of McIntyre Gulch. These projects were completed to alleviate existing drainage problems of the DFC core area and provide flood control and additional storage capacity along McIntyre Gulch.

Stormwater flows generated from the DFC are predominantly discharged into McIntyre Gulch through a series of ditches and stormwater systems in a southeasterly pattern. Since McIntyre Gulch is a major basin-wide drainage passing through the DFC, storm runoff management of this drainage is of great concern. In addition, continued development in the upper basin will lead to higher peak flows in the future, resulting in the need to maintain the channel of McIntyre Gulch at the DFC.

Other drainage considerations include the undeveloped areas directly north of North Avenue. There are a series of three detention ponds within the property that are used to manage stormwater runoff that originates from the commercial developments located along Union Street and from the Cold Springs Park-n-Ride facility. During high runoff peaks, stormwater is discharged from Detention

Sanitary Sewer System at the DFC

Figure 18



Pond #3 directly in the Agricultural Ditch, or possibly into the adjacent open area to the east. The Agricultural Ditch is owned and managed by the Agricultural Ditch and Reservoir Company, in Lakewood, CO. As a matter of practice and policy, the Agricultural Ditch and Reservoir Company does not allow new storm sewer piping connections or storm runoff to be conveyed into the Agricultural Ditch without their prior written permission. The location of storm sewer facilities and lines at the DFC are illustrated on Figure 19.

3.4.7.4 Natural Gas. The original natural gas system that was installed by the Federal government and dedicated in 1990 to the Public Services Company of Colorado (PSC) as the central steam heating system was abandoned and separate boilers were installed in all buildings. The PSC is the largest utility in the state and provides natural gas and electric service to over one million customers in Colorado, including the City of Lakewood. Various lines have been abandoned due to their age, condition, or discontinuance of service to building sites. Abandoned lines have been left buried and typically do not create difficulties for proposed development.

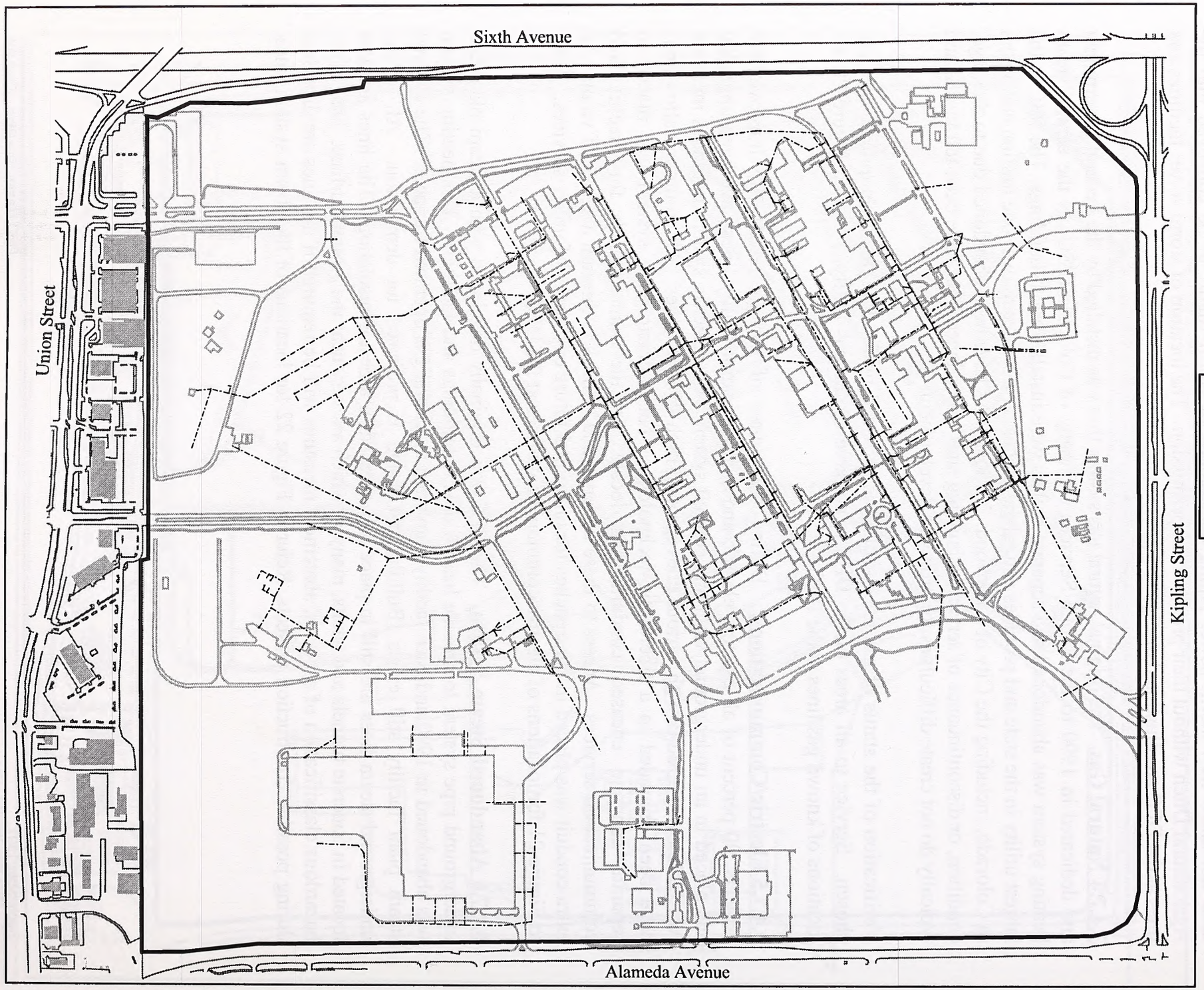
Verification of the status of gas lines should be provided by the PSC as development sites are chosen. Service to all areas of the DFC is possible by the gas utility. Refer to Figure 20 for locations of known gas lines at the DFC.

3.4.7.5 Electric/Communications. During the course of various recent site improvement projects, 90 percent of all existing electric and communication utility lines have been upgraded and placed in an underground vault and conduit system. The electric system upgrades included two 15 kilovolt circuits with various aboveground high voltage boxes. All communication lines have been upgraded to a fiber-optic technology. This infrastructure system was placed in separate concrete encased conduits, but located in the same trench for electric and communication services. Access to these underground utilities is through a series of vaults. An extra conduit was placed in the trenches for undefined future expansion of utility services. Refer to Figure 21 for locations of electric/communication lines at the DFC.

3.4.7.6 Abandoned Steam System. The DFC was originally developed with a steam plant and underground pipe system to provide heat to on-site buildings and facilities. This heating system was abandoned in 1990 and each facility converted to natural gas operated furnaces. The original steam plant facility still exists (Building #47), but is proposed for demolition. All of the underground steam lines are still in place and encased in asbestos insulation. The lines are also located in concrete tunnels and vaults, many of which are very near the ground surface. Due to the hazardous classification of asbestos, abatement measures will be required if the lines are disturbed during possible construction projects. Refer to Figure 22 for locations of the steam system lines.

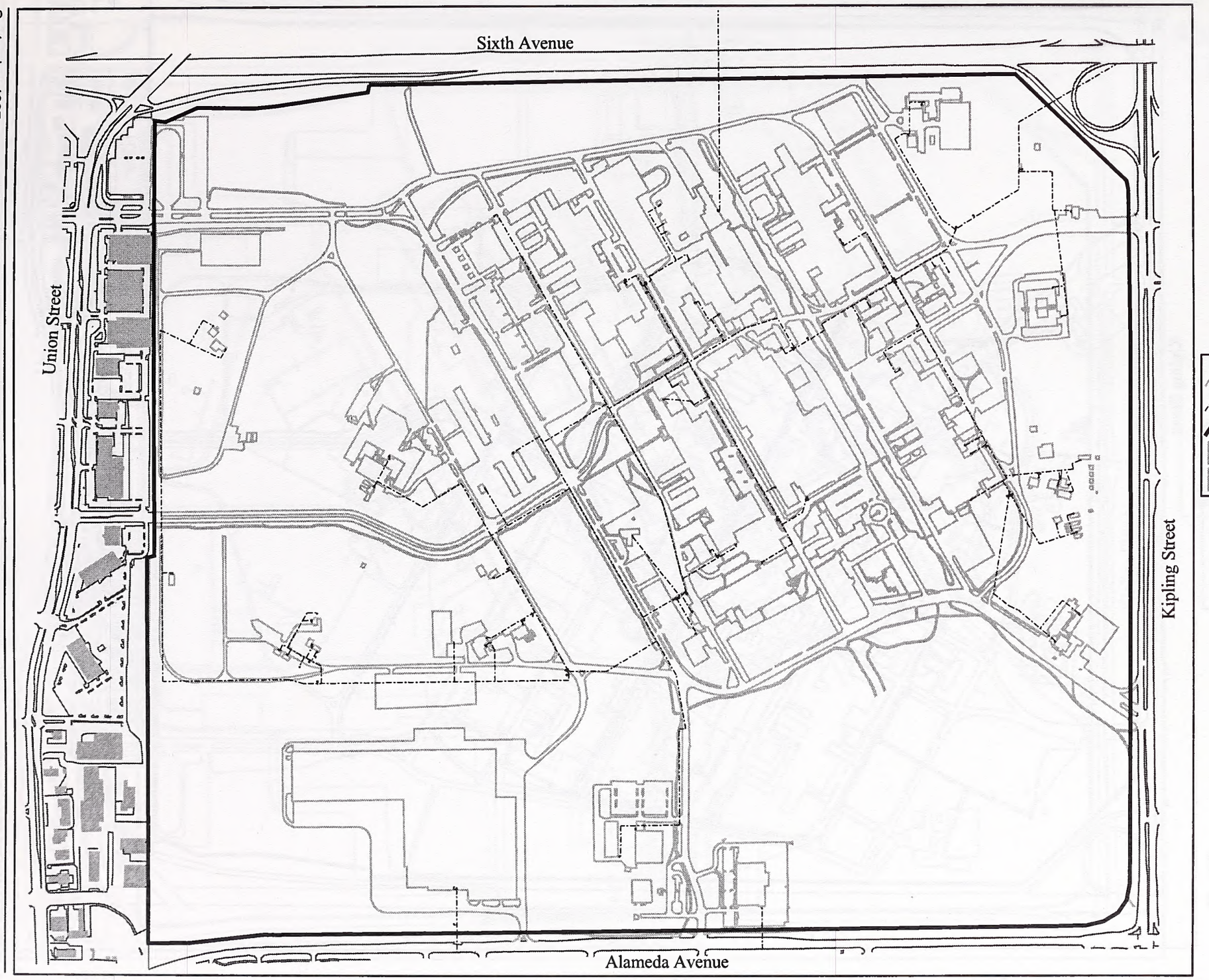
Storm Sewer System at the DFC

Figure 19



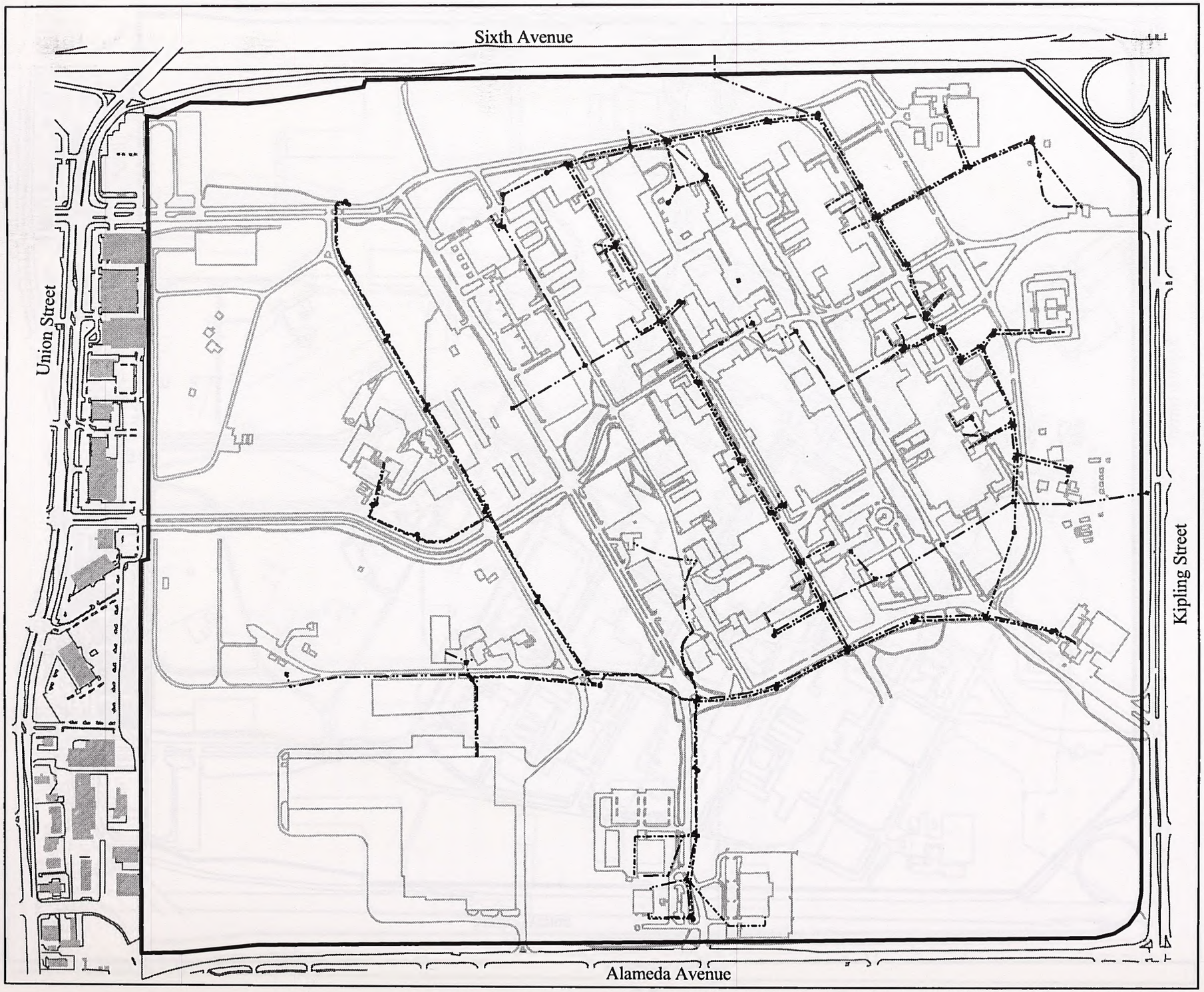
Natural Gas Distribution System of the DFC

Figure 20



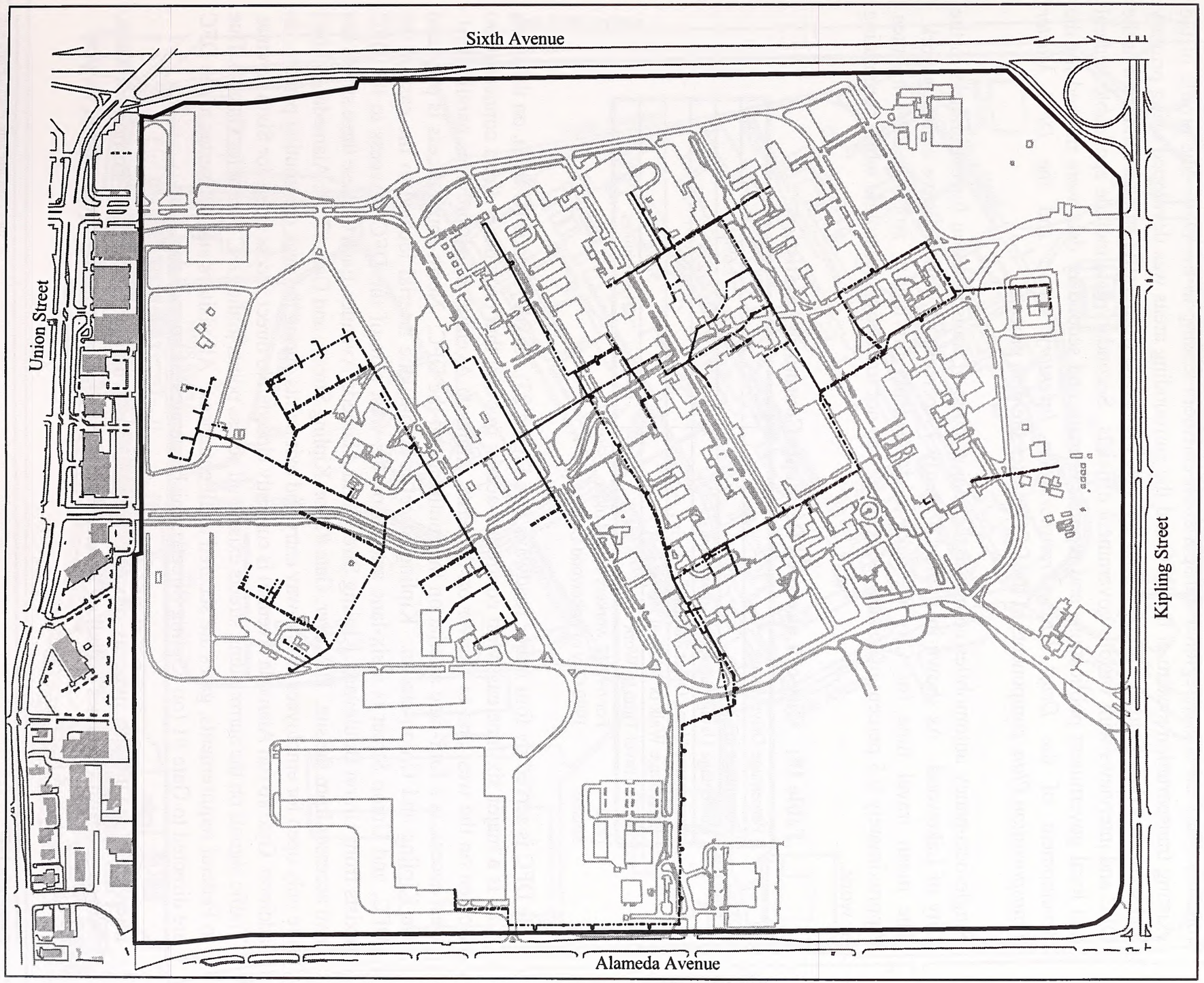
Electric & Communication Lines at the DFC

Figure 21



Abandoned Steam Lines at the DFC

Figure 22



3.5 Transportation and Traffic

Implementation of the Proposed Action has the potential to affect both local and regional traffic patterns and volume; therefore, the ROI for this resource includes the DFC property; adjacent roadways; and the major regional transportation corridors leading to the DFC. The profile of the existing transportation system at the DFC and the surrounding areas was developed using primary and secondary data sources. Primary data includes the results from traffic studies conducted at the DFC and interviews with various government officials. Secondary data include applicable Federal and local government publications and reports. Primary and secondary data were utilized for the development of the *Draft DFC Transportation Inventory* report and the *DFC Master Transportation Plan*, components of the DFC master site plan process.

Single-occupancy automobiles comprise the major mode of transportation for commuters in the City of Lakewood. As shown in Table 18, nearly 79 percent of workers drive alone to work. The mean travel time for City of Lakewood residents driving to work is 21.9 minutes. Approximately 9.5 percent of Lakewood residents do not travel by automobile while commuting to work.

Table 18: City of Lakewood Residents Commuting Statistics

Percentage Drive Alone	78.9%
Percentage in Carpools	11.6%
Percentage Using Public Transportation	3.5%
Percentage Using Other Means	0.8%
Percentage Walk or Work at Home	5.2%
Mean Travel Time to Work	21.9 minutes

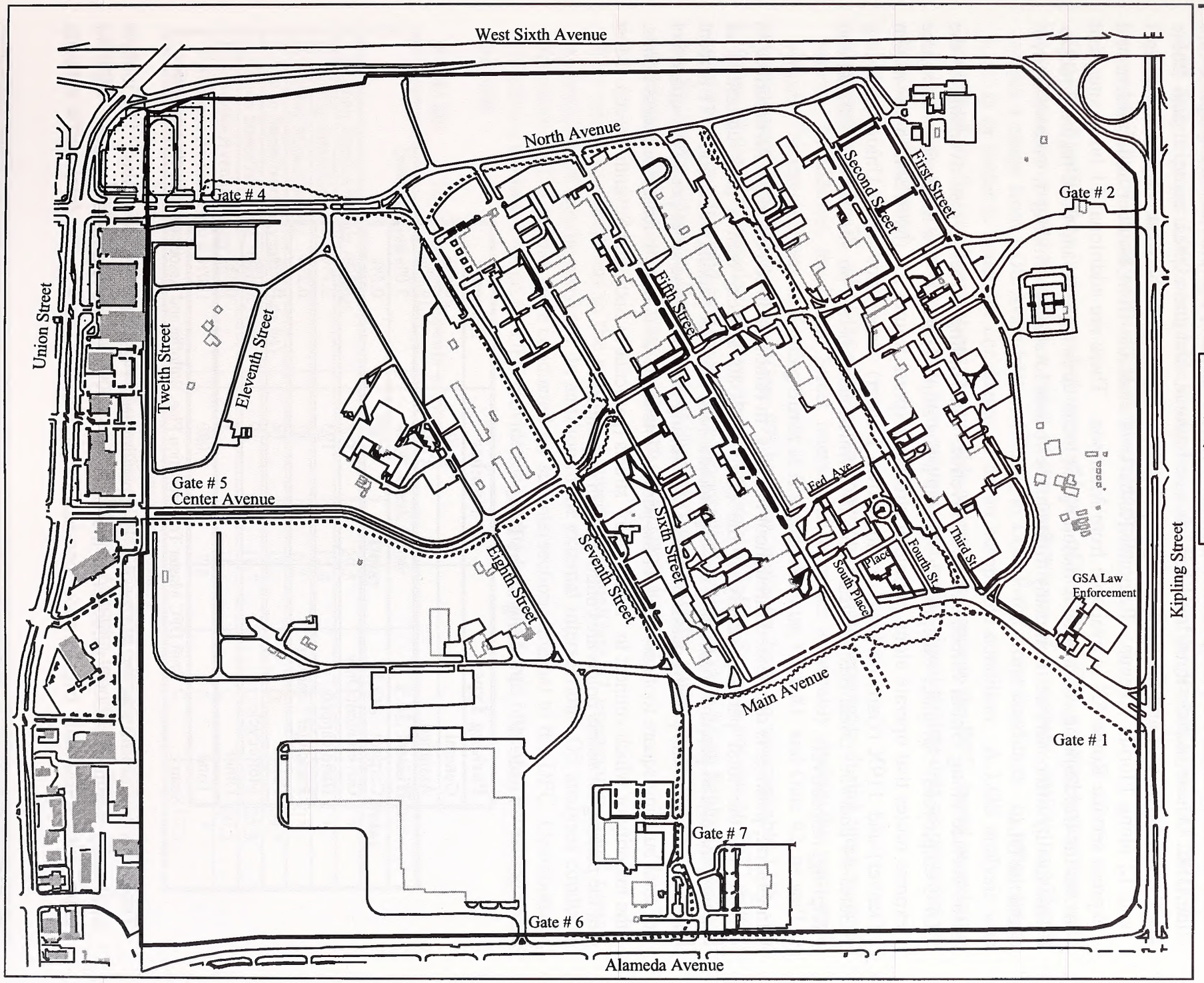
Note: For 69,842 workers 16 and older
Source: 1990 City of Lakewood Census.

The DFC is served by four major roadways (see Figure 23). Sixth Avenue (U.S. 6), on the north side, is a major six-lane east-west controlled-access freeway that provides a direct connection to Golden on the west and to Denver on the east. Alameda Avenue, which provides parallel east-west access, is a four-lane arterial on the south side of the DFC. North-south access is provided via Kipling and Union streets. Kipling Street is a four-lane arterial located to the east of the DFC, and Union Street is a six-lane arterial on the west side of the DFC. Access to the DFC exists from Union Boulevard, Kipling Street, and Alameda Avenue. Each of these three streets has two accesses from the site. However, Gate #2 (on Kipling Street), and Gate #7 (on Alameda Avenue) are only open for employees as one-way entry and exit points during the peak commuting periods. In addition, Gate #6 (on Alameda Avenue) is currently closed. No direct access exists for Sixth Avenue. Traffic signals on the surrounding streets exist at all access points to the DFC except for Gate #6. Due to Federal requirements, gates are secured at all entrances. All visitors and deliveries to the DFC are directed to Gate #1 (on Kipling Street), which operates 24 hours a day.

Internal to the DFC, the majority of streets are two lanes with two-way traffic. Portions of Main, Center, and North avenues and all of Seventh Street have four lanes. Short segments of Center

Transportation/ Circulation at the DFC

Figure 23



and South Center avenues near Gate #1 are one-way streets. Except for Twelfth Street at the west of Main Avenue, all roads are paved.

There are five Regional Transportation District (RTD) bus routes that provide direct service into the DFC. These include three local service, one regional, and one express route. Local Route 100 provides service and the north along Kipling Street. Service to the west is by local Routes 3 and 12 along Florida Avenue. Regional Route G is available from Boulder and Golden, and express service Route 5X is available from Morrison. There are additional 11 bus routes that access the Cold Springs Park-n-Ride including six local, three express, and three regional routes. This facility offers service from many different metro area locations including downtown Denver and the DIA.

Bus service along Union Street, Alameda Avenue, and Kipling Street is also available to the DFC employees. All gates except Gate #2 have a bus stop. There are two local routes and three express routes that operate along perimeter streets. Express Routes 2X (Morrison to downtown Denver) and 119X (Garrison/Jewel to downtown Denver) serve stops along Union, including Gates #4 and #5. Local bus Routes 3 and 100, which also operate on site, serve Alameda and Kipling, respectively.

In general, parking is distributed throughout the DFC in relationship to buildings. As described in Table 19, the total parking supply at the DFC is 7,080 spaces, with a peak utilization of approximately 56 percent. Excluding six large remote lots, the peak parking utilization is 71 percent in the core area. Peak parking demand equates to a parking demand of one space per 1,000 square feet of total building square footage. Most of the parking lots at the DFC have at least two access points, the majority of which connect to "north-south" streets (particularly Sixth and Seventh streets). Most of the parking lot access points are controlled with stop signs.

Table 19: Parking at the DFC

Parking Type	Number	Percent
General	5,407	76.4%
Assigned	1,016	14.4%
Visitor	210	3.0%
Carpool	32	0.5%
Government Only	179	2.5%
Handicapped	193	2.7%
Passenger Loading	17	0.2%
Police	12	0.2%
Motorcycle	10	0.1%
Other	4	0.1%
Total	7,080	100%

Source: Draft DFC Master Transportation Plan, Balloffet and Associates, Inc., August 1996.

Total daily traffic into and out of the DFC is approximately 14,850 trips per workday. The highest total daily volume is 8,000 vehicles at the Gate #1 entry, west of Alameda Avenue. Gate #4 entry, with 4,400 daily trips is about one-half the volume of Gate #1. The total traffic entering

and existing the DFC on a daily basis is about 14,850 vehicles, with about 10 percent (1,500 vehicles) occurring in the morning peak commuting hour and about 13 percent(1,900 vehicles) in the afternoon peak commuting hour. Based on an existing three million square feet of occupiable building space and an employee population of approximately 5,200, the DFC generates about 4.95 daily trips per 1,000 occupiable square feet and 2.9 daily trips per employee. As the DFC is a secured facility, all visitors are required to enter via Gate #1 or Gate #4. Visitor arrivals are recorded daily by security officials at each entrance gate.

Quality of traffic flow is measured in terms of Level of Service (LOS), a rating system that uses a quantitative method to assign a value to the performance of a roadway facility, grading it within a range from LOS A-the best condition, to LOS F-the worst condition. In urban areas, LOS D or better is generally considered to be an acceptable condition. A LOS analysis was conducted for the key intersections that provide access or entrance to the DFC, based on existing a.m. and p.m. peak hour intersection turn volumes and traffic signal timing data as provided by the City of Lakewood.

As shown in Table 20, all of the analyzed intersections operate acceptable during the a.m. peak period. In addition, the Union Street intersection operates acceptably during the p.m. peak period. The intersections on Kipling Street at Alameda Avenue, Gate #1, and Gate #2, as well as the intersection of Alameda and Gate #7, however, currently have an unacceptable LOS. In review of the LOS calculation sheet, the conditions of Kipling Street is not due to DFC traffic, but the heavy southbound movement. The proposed relocation of Gate #1 on Kipling Street will require by the Colorado Department of Transportation a traffic study, including traffic signal progression analysis, as well as an evaluation of rephasing impacts.

With minor modifications to the existing Alameda Avenue/Gate #7 intersection signal timing, acceptable LOS can be provided. In addition to the external intersection LOS analyses conducts, intersection LOS studies were conducted for six intersections internal to the DFC. Operationally, the internal roadways within the DFC provide for good to excellent levels of service for exiting traffic demand.

Table 20: Intersection Levels of Service

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay	LOS	Delay
1. Kipling Street/Alameda Avenue	D	29.5	F	*
2. Kipling Street/Gate #1	C	15.8	F	*
3. Kipling Street/Gate #2	B	6.2	F	*
4. Union Street/North Avenue (Gate #4)	C	19.1	D	29.7
5. Union Street/2nd Place (Gate #5) **	C	18.7	D	25.3
6. Alameda Avenue/Union Street	C	18.1	C	20.2
7. Alameda Avenue/Gate #7	B	7.8	F	*
(with timing modifications)			C	17.2

* When volumes exceed capacity, delay cannot be calculated.

** This analysis preceded the opening of Gate 5 as a major commuter portal.

Source: Draft DFC Master Transportation Plan, Balloffet and Associates, Inc., August 1996.

3.6 Development Encumbrances/Use Constraints

While much of the property within the DFC provides opportunities for future development and uses, some of the existing conditions at the DFC presents potential encumbrances or limitations on future use or development within certain areas. Encumbrances are those conditions that tend to limit certain uses of land. Encumbrances may be natural in origin or the result of current or former human activities. Encumbrances and their effects on future land use vary depending upon the proposed land use. For example, a former landfill may not be considered an encumbrance if its proposed use is an open space district. The same landfill, however, may be considered an encumbrance if its proposed use is a future development district. Highlighted on Figure 24 are the areas of the DFC that possess potential encumbrances to future land use or development. As noted earlier, OU boundaries are subject to change pending future site characterization and remediation activities. Specifically, all areas with potential development constraints or use limitations possess one or more of the following attributes:

Topography. Potential topography-related use encumbrances are expected to occur in the areas of steep slope. These areas occur along the McIntyre Gulch channel and to the south and west of Building #810.

Soil Types. Potential use soil type-related encumbrances are expected to occur in areas possessing Ustic Torriothents, loamy, 15 to 50 percent slopes soil complex type. This complex exists along eastern portion of McIntyre Gulch. Potential soil-related encumbrances could also result from the presence of hydric soils inclusions that may occur in the Denver-Urban land complex (0 to 2 percent slopes), Denver-Urban land complex (2 to 5 percent slopes), and the Englewood-Urban land complex (0 to 2 percent slopes) soil complexes.

Hydrology/Water Quality. Potential use encumbrances due to hydrology occur in existing water resource areas including: the three detention basins (ponds #1, 2, and 3); Downing Reservoir; McIntyre Gulch and its two tributaries; and the Agricultural Ditch.

Vegetation. Encumbrances due to vegetation include areas of naturally existing vegetation along: McIntyre Gulch and its tributaries; the Agricultural Ditch south of McIntyre Gulch; and surrounding Downing Reservoir.

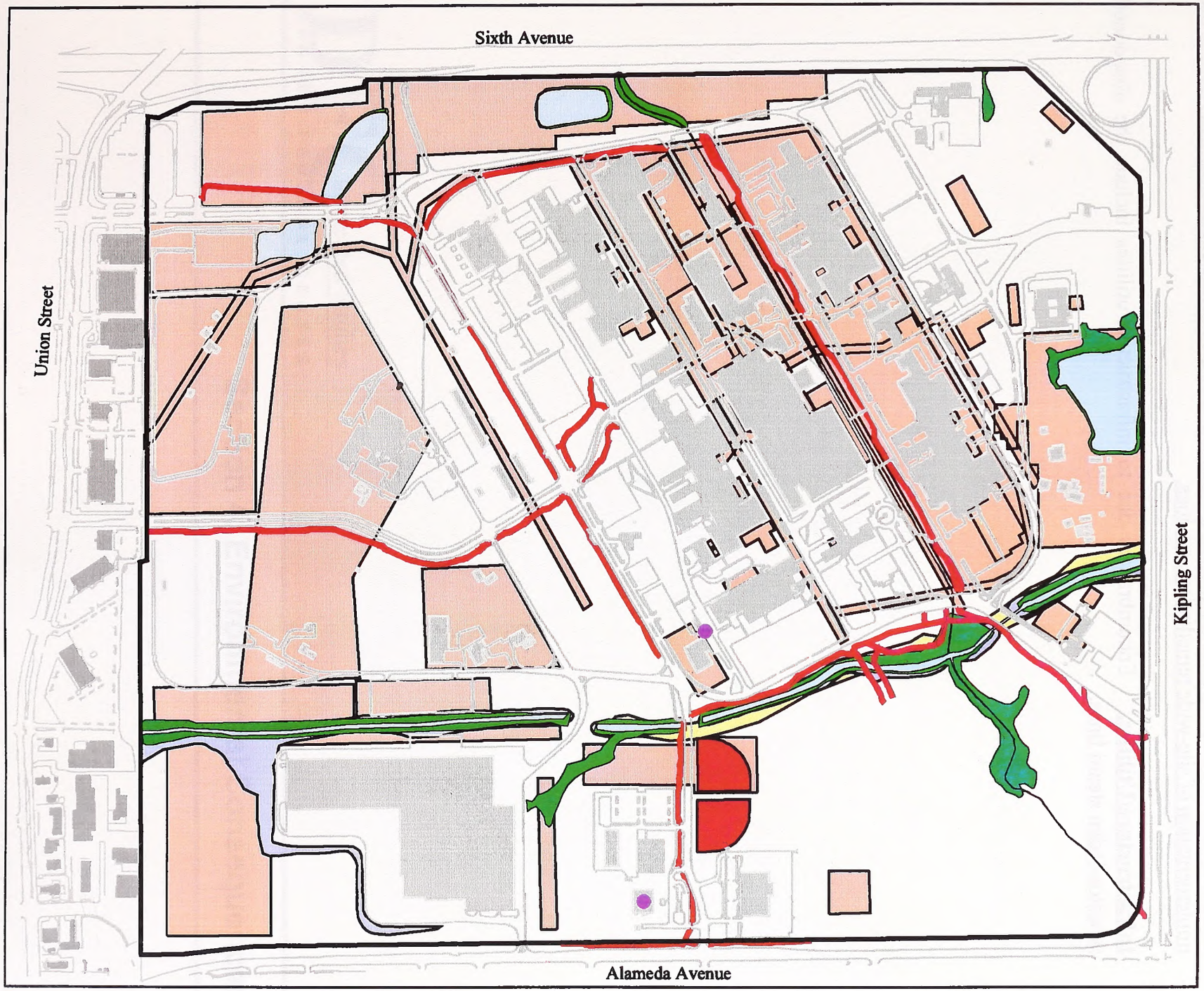
Wetland Resources. Encumbrances due to wetland resources include the following surface water resources: the three detention basins (ponds #1, 2, & 3); Downing Reservoir; McIntyre Gulch and its two tributaries; and the Agricultural Ditch.

Cultural Resources. Encumbrances due to cultural resources include two structures previously identified as being potentially eligible for National Register listing: Building #710; and the OCD Emergency Operation Center structure.

Recreation. Encumbrances due to recreation include: the existing ball fields; bicycle trails; and exercise paths.

Development Encumbrance Areas at the DFC

Figure 24



Land Use. Encumbrances due to former land use at the DFC include the areas identified as OUs in the Draft PA, and other areas where potential contamination-related encumbrance to the Proposed Action may exist, pending further characterization. Potential contamination in these areas may require corrective measures in advance of any future development or proposed land use. These areas are the subject of an independent site-wide investigation at the DFC that will result in the implementation of site-wide remediation activities.

Infrastructure/Utilities. Encumbrances due to infrastructure/utilities include the abandoned asbestos-laden steam lines.

DFC Integrated Studies
DENVER FEDERAL CENTER

Section 4: Environmental Consequences

4.0 Environmental Consequences

The implementation of the Proposed Action has the potential to affect various environmental resources within the DFC property, as well as the potential to affect certain resources beyond the boundaries of the DFC. Section 4.0 of this document identifies and evaluates the anticipated environmental consequences/impacts associated with the Proposed Action and the No-Action alternative. This analysis assumes that the potential for impacts from the Proposed Action is greater under the moderate growth level-of-use scenario as compared to the status quo or contracted level-of-use scenarios. This is because the moderate growth scenario would have the potential to create the highest level of reasonably foreseeable impacts. The moderate growth scenario represents the "worst case" from an environmental analysis standpoint. Throughout the development of the proposed master site plan, consideration was given to the existing environmental resources and identified use encumbrances at the DFC. This has provided opportunities to avoid many of the potential impacts and use encumbrances through careful and judicious planning recommendations.

This section is organized into the following subsections: Physical Environment; Biological Resources; Cultural Resources; Socioeconomic Factors and Infrastructure; and Transportation and Traffic. Within each of these subsections, the anticipated impacts to each of the potentially affected environmental resources are described and assessed. Identified for each of the environmental resources are: the assumptions made; the methodology followed; the levels of impacts considered and any existing conditions with the potential to encumber the implementation of the proposed action. Pollution prevention measures implemented or planned for the DFC, including those incorporated into the Master Site Plan are included in this section. In addition, this section also evaluates and identifies potential impacts to the following: Cumulative Impacts; Unavoidable Adverse Impacts; Relationship Between Short-Term Use of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity; Irreversible or Irretrievable Commitments of Resources; and Conflicts with Federal, Regional, State, Local, or Indian Tribe Land Use Plans, Policies, and Controls.

4.1 Physical Environment

The potential environmental consequences/impacts evaluated in this subsection address the following environmental resources: topography; soils; hydrology and water quality; air quality; and noise.

4.1.1 Topography

It is assumed that standard erosion control practices would be implemented to minimize disturbance to the DFC's topography from construction/demolition activities associated with the Proposed Action. Potential impacts to topography are assessed based on the slopes, gradients, and aspects existing at the DFC. Impacts are considered to occur if topographic features of the DFC would be significantly altered as a result of implementing the Proposed Action, or if the topographical

attributes of the DFC present development constraints to the Proposed Action that cannot be overcome through standard engineering and design. The following levels of impacts were considered:

None: Implementation of the Proposed Action results in no or negligible alterations to the topography of the DFC.

Insignificant: Implementation of the Proposed Action results in an alteration to topography of the DFC that cause an increase of stormwater runoff, but not to a level that exceeds relevant regulatory/permit thresholds.

Significant: Implementation of the Proposed Action results in an alteration of the highest or a prominent natural topographic feature at the DFC, or an alteration to the topography of the DFC that cause an increase of stormwater runoff to a level that exceeds relevant regulatory/permit thresholds.

Beneficial: Implementation of the Proposed Action has a positive effect on the topography of the DFC.

Anticipated Consequences - With the exception of the existing steep slopes along McIntyre Gulch and to the south and west of Building #810, there are no topographical features at the DFC that present potential development constraints or land use limitations. In the proposed master site plan, all of the areas of the DFC with steep slopes are designated as part of the open space district (see Figure 6). Therefore, the Proposed Action would not be encumbered by the existing topography. Implementation of the Proposed Action is not anticipated to have any impacts on the existing topography. The No-Action alternative would have no impact on the topography of the DFC.

4.1.2 Soils

It is assumed that standard erosion control, stormwater management, and fugitive dust control practices would be implemented for all construction/demolition activities associated with the Proposed Action. Potential impacts to soil resources are assessed based on limitations associated with existing soil types and the extent of soil disturbances associated with the Proposed Action. Impacts are considered to occur if there is significant soil loss or disturbance resulting from demolition, construction, or landscaping activities, or if any existing soil limitations present constraints to the implementation of the Proposed Action that cannot be overcome through engineering and design. The following levels of impacts were considered:

None: Implementation of the Proposed Action results in no or a negligible loss, compaction, or degradation of soil at the DFC.

Insignificant: Implementation of the Proposed Action results in soil loss, compaction, or degradation at the DFC that detrimentally affects the existing on-site vegetation .

Significant: Implementation of the Proposed Action results in soil loss, compaction, or degradation at the DFC that lead to a loss of existing on-site vegetation. The existing soil limitations present development constraints to the implementation of the Proposed Action that cannot be overcome through engineering and design.

Beneficial: Implementation of the Proposed Action has a positive effect on the soils of the DFC.

Anticipated Consequences - According to the *1980 Soil Survey for Golden, CO*, some of the soil types that occur at the DFC may possess limitations that present development constraints. Of the seven soil types identified as occurring at the DFC, only the Ustic Torriothents soil unit is described as possessing limitations that present potentially significant development constraints. This soil unit occurs along the slopes of McIntyre Gulch on the eastern side of the DFC (see Figure 8). Other soil units at the DFC also have potential to possess limitations that would require special engineering or design to overcome. Standard engineering testing for soil limitations is essential for any development activity at the DFC. In addition, there is the potential that contamination may exist within the soil in certain areas at the DFC. Contamination-related impacts and development encumbrances associated with the DFC soil resources are addressed in Section 4.4.6 (Land Use).

In the proposed master site plan, all areas of the DFC with the Ustic Torriothents soil unit are designated as part of the open space district (see Figure 6) and would not be a location for future development. Therefore, the Proposed Action would not be encumbered by the existing soil resources at the DFC. Implementation of the Proposed Action is not anticipated to have any impacts on the existing soil units. The No-Action alternative would have no impact on the soils of the DFC.

4.1.3 Hydrology and Water Quality

The following assumptions are made for this resource area: standard erosion control and stormwater management practices will be implemented for all construction/demolition activities; full compliance will be met with all required permits (e.g., stormwater, NPDES); no activities associated with the Proposed Action will occur within the identified flood plains at the DFC.

Existing water resources, uses, flow patterns, and quality are analyzed based on a data and literature review to determine existing conditions. Potential impacts are considered to occur to hydrology and water quality if the requirements of the CWA and the Safe Drinking Water Act, as amended are exceeded. Potential impacts to water quality also include any increase in sediments or pollutants into receiving waters, turbidity, and contamination due to soil erosion as a result of the implementation of the Proposed Action. The following levels of impacts were considered:

None: Implementation of the Proposed Action results in no or a negligible degradation of water quality or alteration to existing hydrology at the DFC or within the ROI for this resource.

Insignificant: Water quality at the DFC or within the ROI is degraded through implementation of the Proposed Action, but not to a level that exceeds any relevant regulatory/permit threshold. Implementation of the Proposed Action results in a temporary alteration of existing hydrology at the DFC or in the surrounding areas.

Significant: Water quality at the DFC or within the ROI for this resource is degraded through implementation of the Proposed Action to a level that exceeds any relevant regulatory/permit threshold. Implementation of the Proposed Action results in a permanent alteration of existing hydrology at the DFC or in the surrounding areas.

Beneficial: Implementation of the Proposed Action has a positive effect on the hydrology and/or water quality of the DFC.

Anticipated Consequences - Surface water and wetland resources at the DFC consist of: McIntyre Gulch and its tributaries (located to the west and east of Building #810); the Agricultural Ditch; Welch Ditch; Downing Reservoir; and the three detention basins in the northwestern portion of the DFC.

In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Development activities in the Stage II and III development districts in the northwestern portion of the DFC have the potential to impact hydrology in Detention Pond #1, due to the close proximity of this water/wetland resource. In addition, the master site plan's proposed realignment of Gate #1 to a location near the southern side of Downing Reservoir also has the potential to impact hydrology. These potential impacts to hydrology, however, could be avoided if future development activities are restricted from occurring within an adequate buffer zone around these resources. Therefore, the implementation of the Proposed Action in a portion of the Stage II and III development districts may be encumbered by the existing hydrology.

Water quality at the DFC also has the potential to be impacted through development and operational activities associated with the Proposed Action. Water quality impacts are anticipated to consist of short-term construction-related impacts and long-term impacts created by increasing the impervious areas on the DFC. Due to the DFC's topography, McIntyre Gulch and the detention basins are the most likely surface water resources to be impacted. The Agricultural Ditch is sufficiently bermed that little or no runoff enters this surface water resource, except when a release from Detention Pond #3 occurs during major storm events. Such discharges require the prior written permission of the Agricultural Ditch and Reservoir Company. Numerous users of water from the Agricultural Ditch downstream from the DFC require that adequate ditch capacity be maintained through all stretches of the ditch. Therefore, it is imperative that development activities at the DFC do not impact the capacity of the Agricultural Ditch to convey these waters. Prior to initiating the design or construction of any structure crossing the Agricultural Ditch or development adjacent to the Agricultural Ditch, proposed plans will need to be reviewed and a license agreement approved by the Board of the Agricultural Ditch and Reservoir Company. License agreements are intended to protect the maintenance, operation, and conveyance of irrigation flows in the Agricultural Ditch right-of-way.

Neither short-term nor long-term impacts are anticipated to be significant to water quality at the DFC or within the ROI. On-going efforts to monitor and control groundwater quality at the DFC (see Section 3.1.3) are being conducted independent of this EIS and would not be affected by the proposed action.

Implementation of construction activities may increase sediment and some erosion of soils into the surface water. Standard construction techniques to control erosion can mitigate these loadings to the McIntyre Gulch and the floodway. Long-term impacts are anticipated to be associated with stormwater runoff and increased loadings from impervious areas. Considering the large area already developed within the McIntyre Gulch drainage area, increased build out on the DFC is not anticipated to increase the impervious area significantly to impact water quality. Therefore, the potential impact from the implementation of the Proposed Action on the existing hydrology or water quality at the DFC or within the ROI is considered to be insignificant. The No-

Action alternative would have no impact to the hydrology and water quality on the DFC or within the ROI.

4.1.4 Air Quality

The following construction- and operation-related assumptions are made as part of the Proposed Action's compliance with Federal, state, and local regulations:

Construction - Standard construction practices would be implemented to control fugitive dust emissions from all disturbed areas greater than one acre from which fugitive emissions will be emitted. These practices require the use of all available and practical methods that are technologically feasible and reasonable in order to minimize such emissions in accordance with the requirements of Section III.D of Colorado Air Quality Control Commission (AQCC) Regulation No. 1. Some of the control measures and operating procedures to be employed may include, but not necessarily be limited to, planting vegetation cover, providing synthetic cover, and the use of watering, chemical stabilization, furrows, compacting, minimizing disturbed areas in the winter, wind breaks and other methods or techniques approved by AQCC. Since any new construction at the facility would be small in scale and occur over a period of 10 to 20 years, it is assumed that construction emissions will be below *de minimis* levels on an annual basis. For these reasons, impacts due to construction activities were not considered.

Operations - For determination of impacts, it was assumed that the current number of employees employed at the DFC is 5,173 and that this number would increase by 15 percent to 5,949 people. The consequences of this change were estimated based on the number of commuter trips and amount of building space added or removed from use. Any fuel combustion equipment used solely for heating buildings for personnel comfort (i.e. boilers) with a design heat input rate greater than 10 million British Thermal Units (Btu) per hour shall file an Air Pollution Emission Notice (APEN) with the AQCC in accordance with Regulation No. 3. As a Major Employer and Major Business Landlord as defined in AQCC Regulation No. 9, the DFC shall adhere to the requirements and intent of Regulation No. 9 to reduce air pollution resulting from emissions of single-occupancy automobile travel in the Denver Region. This shall be accomplished primarily through the encouragement of travel by public transit, ride sharing, and other emission reducing modes of travel. While it is recognized that associated with the master site plan is the possibility of negative growth, only the growth scenario was analyzed for emissions increase since it is assumed that any reduction in use of the facility through employee attrition will lessen emissions of air pollutants and have a positive impact on air quality.

The consequences of the Proposed Action on air quality were determined based on the actions conformity to the SIP. The EPA developed two major rules for determining conformity of Federal activities; conformity requirements for transportation plans, programs, and projects ("transportation conformity") and all other Federal actions ("general conformity"). This Federal action would be considered a non-transportation or general conformity action.

Federal actions located in nonattainment areas are required to demonstrate compliance with the general conformity guidelines established in 40 CFR, parts 51 and 93, entitled: "*Determining*

Conformity of Federal Actions to State or Federal Implementation Plans" (the Rule). The Rule applies to those Federal actions which are located in areas of nonattainment of the NAAQS. This Federal action is located within an area designated by the EPA as nonattainment for CO (moderate), O_3 (transitional), and PM_{10} (moderate).

The Rule sets applicability requirements for projects subject to the rule through the establishment of annual *de minimis* levels for nonattainment pollutant emissions. Projects that are below the *de minimis* levels are not subject to the General Conformity Rule, while those at or above are required to perform a full conformity analysis. The *de minimis* levels apply to direct and indirect sources of emissions that can occur during the construction and operational phases of the action.

Direct emissions are those caused by, or initiated by, the Federal action which occur at the same time and place as the action. Indirect emissions are those caused by the action but which occur later in time and/or at a distance removed from the action itself, yet are reasonably foreseeable and over which the Federal agency responsible for the action can maintain control as part of the actions' program responsibility.

To determine the applicability of the rule to this Proposed Action, emissions were estimated during the operation of the DFC under a moderate growth scenario of a 15 percent increase in the DFC workforce. For comparison purposes, emissions were also estimated for growth scenarios of 10 and twenty percent increase in the DFC workforce. Emissions were estimated for the pollutant CO and the ozone precursor pollutants, nitrogen oxides (NO_X); and volatile organic compounds (VOC). Since there are no significant sources of PM_{10} emissions associated with the Proposed Action, emissions of PM_{10} are assumed to be below *de minimis* and were not estimated. Annual emissions for VOC, CO, and NO_X were estimated and compared to the *de minimis* levels established in the rule. The *de minimis* level for each of the pollutants is 100 tons per year (tpy).

Potential impacts were assessed based on changes in the intensity of development activities, number of commuting personnel (vehicle trips), and operation activities associated with the Proposed Action. Direct emissions from facility operation are considered to be those emitted by the facility as part of its normal daily functions, primarily from the operation of facility boilers and hot water heaters that supply heating and cooling.

Boiler and heater emissions were estimated based on the required amount of office space needed to accommodate the increases in personnel. For calculation purposes it was assumed that each new employee would need 100 square feet (ft^2) of floor space, or the equivalent of a 10 foot by 10 foot workspace. A heat load requirement of 50 Btu per ft^2 was used to estimate fuel use. It is assumed that all new buildings will have heating units fired by natural gas and that they will operate for 8,760 hours a year.

Indirect emissions for the facility are considered to be those emissions generated by vehicle trips associated with newly assigned personnel. Worker vehicle emissions were based on rates calculated by the EPA approved MOBILE5a vehicle emissions model. MOBILE5a calculates an average fleet emission rate in grams of pollutant per vehicle mile traveled (g/VMT). The estimated daily vehicle miles traveled (DVMT) for the new facility was calculated by

multiplying the estimated number of daily vehicle trips by an estimated trip length of nine miles. It was also assumed that there were 240 working days per year.

Emissions for the Proposed Action were estimated and compared to the general conformity rule *de minimis* values. If emission estimates are reasonably below the *de minimis* level, then the action would be presumed to conform and no further conformity analysis would be required. If the estimated emissions were to exceed the *de minimis* level, then the action would not conform and a formal conformity determination would need to be made, demonstrating how the action would conform. The following levels of impacts were considered:

None: Implementation of the Proposed Action results in no or a negligible increase in emissions of criteria pollutants.

Insignificant: An increase in the emissions of criteria pollutants occurs as a result of the Proposed Action, but does not exceed the NAAQS threshold levels.

Significant: NAAQS are exceeded for any criteria pollutant as a result of increased emissions associated with the implementation of the Proposed Action.

Beneficial: Implementation of the Proposed Action has a positive effect on the air quality within the ROI.

Anticipated Consequences - Air quality at the DFC and the ROI has the potential to be impacted by development and operational activities associated with the Proposed Action. Construction and demolition activities, as well as changes in daily vehicle use and other uses such as laboratory operations resulting from the implementation of the Proposed Action, have the potential to impact air quality.

Under the 15 percent moderate growth scenario, the emission estimates increase from current levels. The operation of the DFC under this scenario would contribute 3.81 tpy of VOC emissions, 36.12 tpy of CO, and 7.22 tpy of NO_X. These estimates are reasonably below the *de minimis* levels of 100 tpy. The results of the emissions estimates are summarized in Table 21. In addition, the estimated emission levels under the 10 and 20 percent growth models are reasonably below the *de minimis* levels of 100 tpy. Refer to Table 22 for detailed information relating to air emission estimations associated with the Proposed Action.

Table 21: Summary of Estimated Annual Operation Emissions in Tons per Year

Pollutant	Annual Emissions by Percent Increase in Personnel		
	10%	15%	20%
VOC	2.13	3.81	5.61
CO	13.54	36.12	39.01
NO_x	3.92	7.22	10.60

VOC = volatile organic compounds, CO = Carbon Monoxide, NO_x = Nitrogen Oxide
Source: Louis Berger and Associates, Inc., July 1996.

Denver Federal Facility - Emissions From Operation

Calculation Assumptions and Data

General		Boiler		Commuter Trips	
Employees	5,173	Assumed fuel:	Natural gas	Daily Commuter trips	10,346 (assigned x 2 daily trips)
Work Days per Year	240	*Required Office Space:*	*100* square feet (ft2) per person (1)	*Average Trip Length:*	*9* miles
Boiler Hrs per Year	8,760	*Assumed heat/cooling load:*	*50* Btu/hr per ft2 (2)	Daily Vehicle Miles Traveled	93,114 miles (trips x length)
		Heat content of fuel:	*1000* Btu/ft3		

Calculation of Emission From Heating/Cooling

Boiler/Heater Emission Rates (3)

Pollutant	VOC	CO	NOx
ER (lbs/MMft3)	*3.83*	*21.00*	*100.00*

Percent Increase	Increase in Employees	Required Office Space for Increase (ft2)	Required Heat Btu/hr	Required Fuel ft3/hr	Required Fuel MMft3/yr	Annual Emissions lb/yr VOC	lb/yr CO	lb/yr NOx	tons/yr VOC	tons/yr CO	tons/yr NOx
10%	517	51,730	2,586,500	2,587	22.66	87	476	2,266	0.04	0.24	1.13
15%	776	77,595	3,879,750	3,880	33.99	130	714	3,399	0.07	0.36	1.70
20%	1035	103,460	5,173,000	5,173	45.32	174	952	4,532	0.09	0.48	2.27

Calculation of Emissions from Commuter Trips

Increase Percent	*10%*	*15%*	*20%*
VMT Increase	9,311	13,967	18,623

Vehicle Emission Rates @ 30 mph (g/mi) (4)

Pollutant	Year 2020 Summer	Winter	Average
VOC	0.85	0.97	0.91
CO	5.48	9.7	7.59
NOx	1.56	1.83	1.70

Estimated Daily Emissions in Tons per Day with Assumed Growth in Employees

Pollutant	lbs per day (5) 10%	15%	20%	tons/yr 10%	15%	20%
VOC	17.41	29.81	37.28	2.09	3.58	4.47
CO	112.26	298.06	310.96	13.47	35.77	37.32
NOx	31.96	56.23	69.44	3.83	6.75	8.33

Summary of Operation Emissions (tons/yr)

Pollutant	Percent Increase 10%	15%	20%
VOC	2.13	3.81	5.61
CO	13.54	36.12	39.01
NOx	3.92	7.22	10.60

Notes: (1) Assumes a 10' x 10' office for each person
(2) Based on tables from "Handbook of A/C Heating and Ventilation." 2nd Edition. Industrial Press, NY
(3) Commercial size boiler. AP-42
(4) MOBILE5a emission model using Colorado emission controls programs
(5) To convert ggrams to pounds multiply by 0.0022

The applicability analysis shows that annual emissions during operation would be below the applicable *de minimis* level; therefore, Conformity Regulations would not apply to this Federal action and a Conformity Determination will not be required. Therefore, the Proposed Action would not be encumbered by air quality. Implementation of the Proposed Action is not anticipated to have any impacts on air quality in the ROI. The No-Action alternative would have no impact to the air quality within the ROI for this resource.

4.1.5 Noise

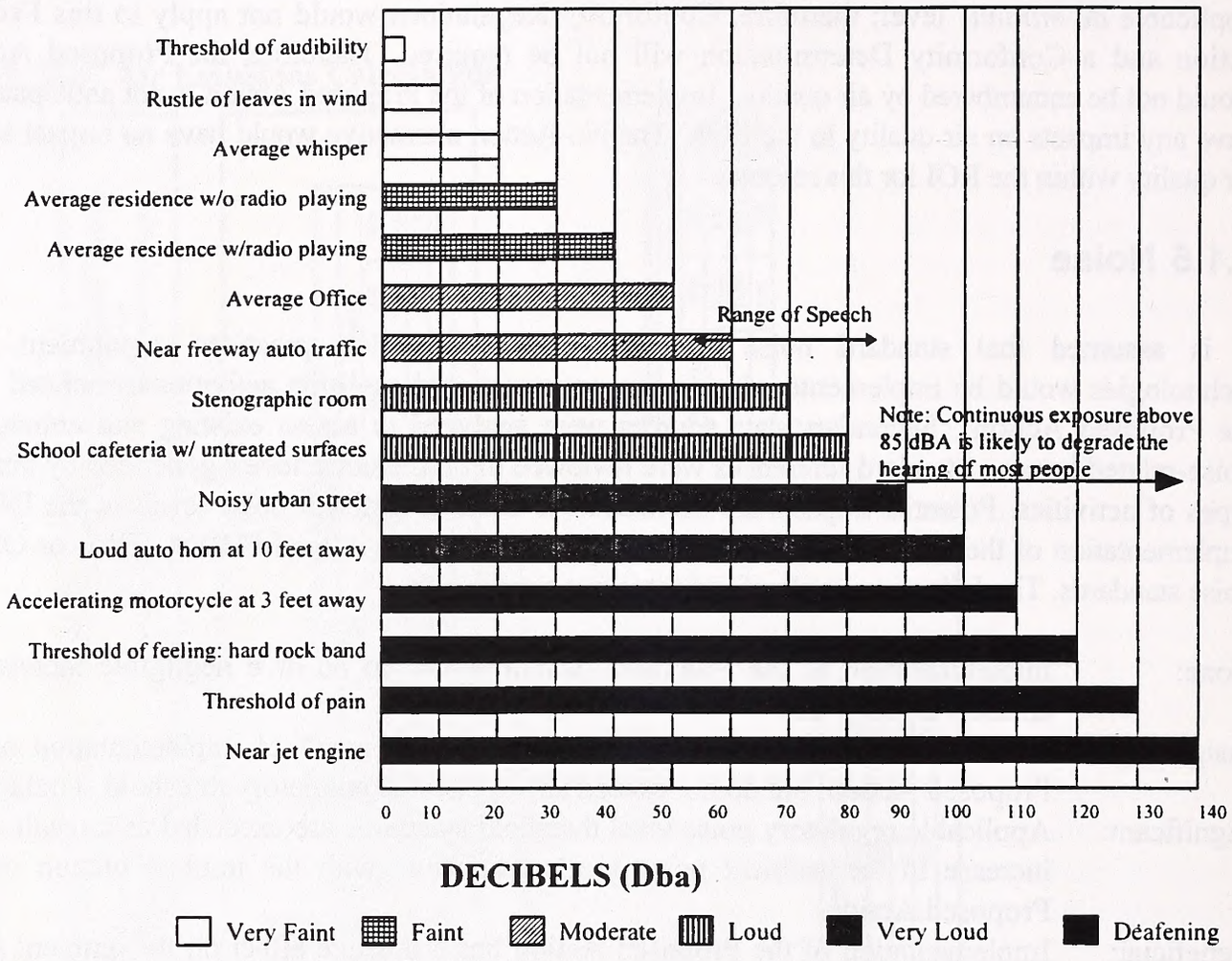
It is assumed that standard noise control-related construction practices, equipment, and technologies would be implemented during any construction/demolition activities associated with the Proposed Action. Secondary data sources were analyzed to assess existing and anticipated noise-related issues. Standard references were reviewed to define noise levels generated by various types of activities. Potential impacts are considered to occur to ambient noise levels at the DFC if implementation of the Proposed Action results in noise levels that exceed FHWA, EPA, or OSHA noise standards. The following levels of impacts were considered:

None:	Implementation of the Proposed Action results in no or a negligible increase in ambient noise levels.
Insignificant:	Increases in the ambient noise levels occur as a result of implementation of the Proposed Action, but do not exceed any applicable regulatory threshold standards.
Significant:	Applicable regulatory noise level threshold standards are exceeded as a result of an increase in the ambient noise levels associated with the implementation of the Proposed Action.
Beneficial:	Implementation of the Proposed Action has a positive effect on the ambient noise levels at the DFC.

Anticipated Consequences - Noise impacts have the potential to result from development-related activities, traffic (commuter and delivery vehicles), and operational activities associated with the Proposed Action.

Development-Related Noise Impacts. These noise impacts could result from demolition activities, excavation and grading, construction of structures and infrastructure, and construction equipment and machinery. Construction vehicles would not operate more than 8 hours per day during normal working hours on week days. The EPA has identified the maximum noise range for commercial building construction as 89 dB (measured as L_{eq} -refer to Figure 25 for noise level comparisons). The construction activities are temporary and are anticipated to have no adverse effects on surrounding land use because noise levels from such sources attenuate quickly with distance. Potential construction related L_{eq} noise levels of 85 to less than 90 dBA at 50 feet from the source would quickly diminish to less than 62 dBA at 2,000 feet from the source. With respect to any grading at the site, assuming bulldozer and dump truck delivery activity only, the L_{eq} levels would be approximately 85 dBA at 50 feet. The noise levels would fade to approximately 67 dBA at 800 feet. These noise levels do not exceed the EPA limits for construction. Therefore, no significant impacts from construction noise are anticipated to the human environment. If noise levels exceeding 84 dBA are detected through on-going monitoring at facilities adjacent to the

Figure 25: Common Sounds Expressed as Decibels



Source: U.S. Department of Housing and Urban Development.

construction area, steps should then be taken to attenuate those levels. Therefore, the Proposed Action would not be encumbered by this noise source. The Proposed Action is not anticipated to result in any long-term development-related noise impacts to the human environment. The No-Action alternative would not result in any noise impacts to the human environment.

Noise associated with development activities is anticipated to have a negligible effect on wildlife since this noise source would be temporary and similar to existing background ambient noise levels. Disturbance to wildlife would be greatest when construction activities are initiated, and would lessen as wildlife becomes acclimated to these noise sources. Therefore, the Proposed Action would not be encumbered by this noise source. The Proposed Action is not anticipated to result in any long-term development-related noise impacts to wildlife. The No-Action alternative would not result in any noise impacts to wildlife.

Traffic-Related Noise Impacts. The existing traffic-related noise L_{eq} levels could experience an increase with the addition of new personnel and their respective vehicles through implementation of the Proposed Action. However, it is assumed that increased employee car pooling and mass transit usage would help to minimize traffic-related noise levels. Because noise levels attenuate

quickly with distance, the L_{eq} levels near potential local receptors would be less than L_{eq} levels adjacent to roadways and potential noise sources. Therefore, the Proposed Action would not be encumbered by this noise source. The Proposed Action is not anticipated to result in any long-term traffic-related noise impacts to the human environment or wildlife. The No-Action alternative would have no noise impacts to the human environment or wildlife.

Operation-Related Noise Impacts. - The existing operational activities at the DFC are primarily institutional/administrative. New operation-related noise sources associated with the Proposed Action are expected to be similar to existing operation-related noise sources. Therefore, the Proposed Action would not be encumbered by this noise source. The Proposed Action is not anticipated to result in any long-term operation-related noise impacts to the human environment or wildlife. The No-Action alternative would have no noise impacts to the human environment or wildlife.

4.2 Biological Resources

The potential environmental consequences/impacts evaluated in this subsection address the following environmental resources: vegetation; wetlands; wildlife resources; and threatened and endangered species.

4.2.1 Vegetation

It is assumed that the DFC is, in general terms, a highly disturbed human-impacted environment. Both primary and secondary data sources were utilized to develop an inventory assessment of existing vegetation. Potential impacts to vegetation are assessed based on the intensity and space requirements of development and operational activities associated with the Proposed Action, and the relative abundance and location of the different types of vegetative communities at the DFC. Impacts are considered to occur if the implementation of the Proposed Action results in a significant net loss of vegetation in any landscaped area, or the elimination or degradation of any area of naturally occurring vegetation. The following levels of impacts were considered:

None: Implementation of the Proposed Action has no or a negligible effect on the vegetation at the DFC.

Insignificant: Implementation of the Proposed Action results in a loss of, or a degradation to, landscaped vegetation, or areas with naturally occurring native plant species at the DFC.

Significant: Implementation of the Proposed Action results in a loss of, or a degradation to, areas of the DFC with unique vegetation or habitats, naturally occurring native plant communities that are relatively unmodified, or the habitat areas associated with Federally listed threatened or endangered species.

Beneficial: Implementation of the Proposed Action has a positive effect on the vegetation at the DFC.

Anticipated Consequences - Impacts to vegetation at the DFC could potentially result from development and operational activities associated with the Proposed Action. Areas of naturally

occurring native vegetation exist along McIntyre Gulch and its tributaries (see Figure 10). Open grassland areas occur along the southern segment of the Agricultural Ditch in the southeast corner of the DFC (see Figure 10). Areas of disturbed vegetation occur along the western portion of the DFC from Alameda Avenue to North Avenue, and in the area to the north and east of the Post Office in the southeastern portion of the DFC (see Figure 10).

In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Development activity in the Stage I, II, and III development districts in the western side of the DFC could potentially result in a change to the disturbed vegetation that currently exists in that portion of the DFC. In addition, development activity in the designated Stage III development district in the southern portion of the DFC could potentially result in a change to the open grassland and disturbed vegetation that currently exists in that area. No areas of naturally occurring vegetation are located within any designated future development districts. Therefore, the Proposed Action would not be encumbered by existing vegetation. No impacts to landscaped or unique vegetation, habitat areas, or areas of naturally occurring native plant species are anticipated to occur through the implementation of the Proposed Action. The Master Site Plan also proposes the use of native plant species for all future revegetation projects. The adoption of management programs for the removal of all invasive exotic plant species is also recommended. The No-Action alternative would have no impact on the vegetation of the DFC.

4.2.2 Wetlands

A jurisdictional determination by the Corps is required to formally confirm the presence and limits of all wetlands subject to regulatory protection under Section 404 of the CWA. A jurisdictional determination was conducted in July 1997 for the northwest portion of the DFC property. This determination confirmed the presence and delineated six wetland resource areas in this portion of the DFC property (see Section 3.2.2). As a Corps jurisdictional determination for all of the DFC's wetland resources has not occurred, it is assumed that all of the wetland resources evaluated in this analysis are jurisdictional wetlands. It is also assumed that additional Corps jurisdictional determination will occur prior to the initiation of any development activities near any of the identified wetland resources at the DFC. As stipulated in Executive Order 11990, Protection of Wetlands (May 24, 1977, 42 F.R. 26961), Federal agencies are directed to:

> "...provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; and (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning."

Both primary and secondary data sources were utilized to develop an inventory assessment of existing wetland resources. Potential impacts to the observed wetland resources are assessed based on the intensity and types of development activities associated with the Proposed Action in or adjacent to each wetland resources to assess the potential for degradation or loss of these resources. The following levels of impacts were considered:

None: Implementation of the Proposed Action has no or a negligible effect on the wetland resources within the ROI.

Insignificant: Implementation of the Proposed Action results in a loss of a non-jurisdictional wetland resource or some degradation to a jurisdictional wetland resource within the ROI.

Significant: Implementation of the Proposed Action results in a loss of a jurisdictional wetland resource within the ROI.

Beneficial: Implementation of the Proposed Action has a positive effect on the wetland resources within the ROI.

Anticipated Consequences - Impacts to wetlands at the DFC could potentially result from development and operational activities associated with the Proposed Action. Wetland resources observed at the DFC consist of: the three detention basins in the northwestern portion of the site (ponds #1, 2, and 3); Downing Reservoir; McIntyre Gulch; and the Agricultural Ditch. Off-site wetlands identified on the USFWS NWI maps as hydrologically connected to the DFC include three wetland areas associated with the downstream portion of the Agricultural Ditch between the DFC and Wolcott Lake.

In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Development activities in the Stage II and III development districts have the potential to impact Detention Pond #1, due to the proximity of this wetland resource to the proposed development areas. In addition, the master site plan's proposed realignment of Gate #1 to a location near the southern side of Downing Reservoir has the potential to impact that wetland resource. However, potential wetland impacts are expected to be avoided during the site development planning process and through consultation with the Corps to restrict future development activities from occurring within an adequate buffer zone around these wetland resources.

Alterations to stormwater flow and volume from increased amounts of developed areas and impervious surfaces associated with the Proposed Action could result in indirect adverse impacts to on- and off-site wetlands. To address this potential issue, the Master Site Plan incorporates the following planning objectives: Utilize appropriate stormwater management techniques; identify suitable locations for additional stormwater detention basins as needed; design on-site flood control and drainage areas to accommodate current and proposed development on the DFC; and coordinate with the City of Lakewood on stormwater runoff control measures.

In addition, any soil disturbing activities associated with the proposed action would require standard erosion and sedimentation control measures as mitigation. These measures would include: stabilization of disturbed soils during construction activities using hay bales and/or filter fabric; revegetation of areas as soon as possible after soils are disturbed to minimize surface water run-off; and soil matting. Additionally, the proposed action would include the installation of stormwater control structures in association with new development to improve the overall efficiency of the storm drainage system at the DFC.

Indirect off-site wetland impacts could potentially occur through a degradation/alteration of either McIntyre Gulch or the Agricultural Ditch. Although no portion of these two linear wetland resources

are located within any of the proposed future development districts, portions of both McIntyre Gulch and the Agricultural Ditch are located adjacent to proposed future development districts. However, potential wetland impacts are expected to be avoided during the site development planning process and through consultation with the Corps to restrict future development activities from occurring within an adequate buffer zone around these wetland resources. Therefore, existing wetland resources within the ROI do not present any significant encumbrances to the implementation of the Proposed Action. Implementation of the Proposed Action is not anticipated to have any impacts on wetland resources in the ROI. The No-Action alternative would have no impact on wetland resources within the ROI.

4.2.3 Wildlife Resources

Both primary and secondary data sources were utilized to develop an inventory of existing wildlife resources and to identify distinct wildlife habitat areas. Potential impacts to these habitat areas are assessed based on the proposed land use/development activities associated with the Proposed Action in or adjacent to each area to assess the potential for habitat degradation or loss. Impacts are considered to occur if the implementation of the Proposed Action results in a net loss of wildlife or habitat areas, or degradation to existing habitat areas. The following levels of impacts were considered:

None: Implementation of the Proposed Action has no or a negligible effect on wildlife or wildlife habitat areas at the DFC.

Insignificant: Implementation of the Proposed Action results in a disturbance or degradation to wildlife habitat areas, or the loss of non-protected wildlife species.

Significant: Implementation of the Proposed Action results in a loss of multiple wildlife habitat areas or a loss in wildlife populations that impairs the sustainability of multiple habitats at the DFC.

Beneficial: Implementation of the Proposed Action has a positive effect on the wildlife resources within the DFC.

Anticipated Consequences - Impacts to wildlife at the DFC could potentially result from development and operational activities associated with the implementation of the Proposed Action. Wildlife habitat areas observed at the DFC consist of the 17 sites recommended for habitat protection by the ITWC, as well as the vegetative areas associated with McIntyre Gulch and Downing Reservoir.

In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Development activities in the Stage II and III development districts in the northwestern portion of the DFC have the potential to impact Detention Pond #1 (ITWC Site D), due to the close proximity of this wetland resource. In addition, the master site plan's proposed realignment of Gate #1 has the potential to impact habitat near the southern side of Downing Reservoir. However, potential impacts to these areas are expected to be avoided during the site development planning process and through consultation with the Corps to restrict future development activities from occurring within an adequate buffer zone around these two wildlife habitat resource areas. No other areas of ITWC-identified wildlife habitat areas occur in proposed future development districts. The proposed master site plan includes a recommendation for leaving

an unmowed buffer around the detention ponds and to provide a site perimeter buffer around the northern edge of the DFC for additional wildlife habitat benefits. Therefore, the Proposed Action would not be encumbered by wildlife resources. Implementation of the Proposed Action is not anticipated to have any impacts on wildlife resources at the DFC. The No-Action alternative would have no impact on wildlife resources at the DFC.

4.2.4 Threatened and Endangered Wildlife

Both primary and secondary data sources were utilized to assess the occurrence of Federally listed threatened and endangered species, or associated habitat areas, at the DFC. Potential impacts to these species are assessed based on the intensity and types of development activities/proposed land uses associated with the Proposed Action in or adjacent to associated habitat areas at the DFC to assess the potential for habitat degradation or loss. Impacts are considered to occur if the implementation of the Proposed Action results in a loss of a threatened or endangered species or any associated habitat area, or degradation to any associated habitat area. The following levels of impacts were considered:

None: Implementation of the Proposed Action has no or a negligible effect on Federally listed threatened, or endangered species, candidate species, or associated habitat areas at the DFC.

Insignificant: Implementation of the Proposed Action results in the loss of any Federally listed candidate species or associated habitat areas at the DFC.

Significant: Implementation of the Proposed Action results in a disruption to or a loss of any Federally listed threatened or endangered species at the DFC.

Beneficial: Implementation of the Proposed Action has a positive effect on Federally listed threatened or endangered species at the DFC.

Anticipated Consequences - Impacts to any Federally listed threatened or endangered species, candidate species, or associated habitat areas that occur at the DFC could potentially result from development and operational activities associated with the implementation of the Proposed Action.

Because no documented occurrences of Federally listed threatened or endangered species, candidate species, or associated habitat areas were identified at the DFC, development and operational activities associated with the Proposed Action were evaluated as having no potential to impact Federally listed threatened or endangered species. In addition, the Proposed Action would not be encumbered by any threatened or endangered species. The No-Action alternative would also have no impact to Federally listed threatened or endangered species at the DFC.

4.3 Cultural Resources

The following assumptions were made for this resource: implementation of the Proposed Action will be coordinated with the Colorado State Historic Preservation Officer (SHPO); if any cultural resources are uncovered as a result of the Proposed Action, a cultural resource investigation will be conducted before work resumes; and the existing cultural resource inventory data, in conjunction

with background research information, provide a reasonable approximation of the kinds of resources that may be expected to occur in areas for which inventory data are currently lacking. An analysis of information gained from both primary and secondary data sources was undertaken to establish baseline existing conditions. All known cultural resources at or near the DFC were identified and mapped. Records and reports pertaining to prehistoric cultural sites were reviewed to extract information about ages, types, and location. Potential impacts to cultural resources were assessed based on the types of development/land uses associated with the Proposed Action in or adjacent to cultural resources at the DFC to assess the potential for degradation or loss. Impacts are considered to occur if the implementation of the Proposed Action results in a loss of cultural resources or degradation to existing cultural resources. The following levels of impacts were considered:

None: Implementation of the Proposed Action has no or a negligible effect on cultural resources at the DFC.

Insignificant: Implementation of the Proposed Action results in a disturbance of cultural resources.

Significant: Implementation of the Proposed Action results in a loss of resources possessing important historic, humanistic, or cultural value.

Beneficial: Implementation of the Proposed Action has a positive effect on cultural resources at the DFC.

Anticipated Consequences - Impacts to cultural resources at the DFC could potentially result from development and operational activities associated with the Proposed Action. The two cultural resources at the DFC previously identified as potentially eligible for National Register listing are Building #710 and the OCD Emergency Operation Center. A determination by the Colorado SHPO concurred that both of these resources are eligible for National Register listing. Building #710 is not located in an area designated as a future development district. The OCD Emergency Operation Center is located in an area designated in the Proposed Action as a Stage I Development District. However, potential impacts to this structure are expected to be avoided during the site development planning process and through adherence to the management procedures of the *DFC Historic Preservation Plan* document which would prevent any future development that impairs or compromises its significance or integrity. Therefore, the implementation of the Proposed Action in this one area of the Stage I development district may be partially encumbered by the OCD Emergency Operation Center. No impacts to cultural resources at the DFC are anticipated to occur through the implementation of the Proposed Action. The No-Action alternative would have no impact on cultural resources at the DFC.

4.4 Socioeconomic Factors and Infrastructure

The potential consequences/impacts evaluated in this subsection relate to the following resources: population; employment and income; housing; community services; recreation resources; land use; and infrastructure/utilities.

4.4.1 Population

A profile of the existing and projected populations within the ROI and the City of Lakewood was developed using secondary data sources. Potential impacts to these populations are assessed based on the changes to the numbers of required employees at the DFC under the different level-of-use scenarios. Impacts to population are considered to occur if the implementation of the Proposed Action results in a significant change in the populations within the ROI. The following levels of impacts were considered:

None: Changes in the number of DFC employees associated with the implementation of the Proposed Action under any level-of-use scenario would have no or a negligible effect on the ROI or City of Lakewood populations.

Insignificant: Changes in the number of DFC employees associated with the implementation of the Proposed Action under any level-of-use scenario would increase or decrease the ROI or City of Lakewood populations by less than 10 percent per year.

Significant: Changes in the number of DFC employees associated with the implementation of the Proposed Action under any level-of-use scenario would increase or decrease the ROI or City of Lakewood populations by more than ten percent per year.

Beneficial: Implementation of the Proposed Action has a positive effect on the population within the ROI.

Anticipated Consequences - Impacts to populations within the ROI and the City of Lakewood could potentially result from changes in the number of employees at the DFC associated with the implementation of the Proposed Action under each level-of-use scenario. In 1995, the population of the ROI was 2,069,025, while the population of the City of Lakewood was 135,500. The projected population for the ROI in the year 2015 is 2,612,050, while a population of 156,100 is projected for the City of Lakewood for that year. These projections represent a population increase for the ROI and the City of Lakewood from 1995 to 2015 of 26.4 and 15.2 percent, respectively.

Under the "Status Quo" level-of-use scenario, it is anticipated that the number of employees at the DFC would remain generally stable throughout the next 20 year time horizon. At present, there are approximately 5,173 workers employed at the DFC. This work force represents approximately 0.25 percent of the ROI population for 1995 and 3.82 percent of the City of Lakewood population for 1995. In comparison to the projected ROI and City of Lakewood populations for the year 2015, a DFC work force of 5,173 employees would represent approximately 0.20 and 3.31 percent, respectively, of these populations.

Under the "Moderate Growth" level-of-use scenario, it is anticipated that the number of employees at the DFC would experience a gradual increase throughout the next 20 year time horizon. A fifteen percent increase in the number of employees would bring the DFC work force to approximately 5,949 employees resulting in an increase in 776 employees. In comparison to the projected ROI and City of Lakewood populations for 2015, the projected 5,949 employees represents approximately 0.34 and 3.81 percent, respectively, of these populations.

Under the "Contracted Use" level-of-use scenario, it is anticipated that the number of employees at the DFC would remain generally stable over the short term (0- to 10-year time horizon), but gradually decline over the long term. (10- to 20-year time horizon). However, with the exception of total closure of the DFC, no impacts are expected to occur under any projected decreased level-of-use.

Under each of the level-of-use scenarios, it is evident that the DFC work force will represent a similar or smaller percentage of the projected populations in the ROI and the City of Lakewood for the year 2015 than in the year 1995. This indicates that the populations of the ROI and the City of Lakewood will continue to grow, under any of the development scenarios, and that the DFC work force will assume a slightly diminished role in the 20-year time horizon. Therefore, the Proposed Action would not be encumbered by population within the ROI. Implementation of the Proposed Action is not anticipated to have any impacts on population in the ROI. The No-Action alternative would have no impact to population. Therefore, no impacts to population are anticipated to result from implementation of either alternatives.

4.4.2 Employment and Income

A profile of the existing employment and income levels within the ROI and the City of Lakewood was developed using secondary data sources. Potential impacts to these economic parameters are assessed based on the changes to the numbers of required employees at the DFC under the three level-of-use scenarios. Impacts to employment and income levels within the ROI and the City of Lakewood are considered to occur if the implementation of the Proposed Action under any of the level-of-use scenarios results in a change to the employment and income levels within the ROI and the City of Lakewood. The following levels of impacts were considered:

None: Changes in the number of DFC employees associated with the implementation of the Proposed Action under any level-of-use scenario would have no or a negligible effect on employment and income levels within the ROI and the City of Lakewood.

Insignificant: Changes in the number of DFC employees associated the implementation of the Proposed Action under any level-of-use scenario would increase or decrease employment and income levels within the ROI and the City of Lakewood by less than ten percent per year.

Significant: Changes in the number of DFC employees associated the implementation of the Proposed Action under any level-of-use scenario would increase or decrease employment and income levels within the ROI and the City of Lakewood by more than ten percent per year.

Beneficial: Implementation of the Proposed Action has a positive effect on the employment and income within the ROI.

Anticipated Consequences - Impacts to employment and income within the ROI and the City of Lakewood could potentially result from changes in the number of employees at the DFC associated with the Proposed Action under each level-of-use scenario. In 1995, the employment level in the ROI was 1,213,402, while the employment level in the City of Lakewood was 79,915. The projected employment level for the ROI in the year 2015 is 1,560,350. Projected employment levels for the City of Lakewood are not currently available. However, if the same employment level per capita

percentage for 1995, 57.2 percent, is assumed for the year 2015, the projected population of 156,100 will yield approximately 89,000 employees in the City of Lakewood for that year.

Under the "Status Quo" level-of-use scenario, it is anticipated that the number of employees at the DFC would remain generally stable throughout the next 20-year time horizon. At present, there are approximately 5,173 workers employed at the DFC. This work force represents approximately 0.43 percent of the ROI workforce for 1995 and 6.47 percent of the City of Lakewood workforce for 1995. In comparison to the projected ROI and City of Lakewood wokforces for the year 2015, a DFC work force of 5,173 employees would represent approximately 0.33 and 5.81 percent, respectively.

Under the "Moderate Growth" level-of-use scenario, it is anticipated that the number of employees at the DFC would gradually increase throughout the next 20-year time horizon. A 15 percent increase in the number of employees would result in the additional employees and bring the DFC work force to approximately 5,949 employees. In comparison to the projected ROI employment levels and the assumed City of Lakewood levels for the year 2015, a DFC workforce of 5,949 employees represents approximately 0.38 and 6.68 percent, respectively.

Under the "Contracted Use" level-of-use scenario, it is anticipated that the number of employees at the DFC would remain generally stable over the short term (0- to 10-year time horizon) but gradually decline over the long term (10- to 20-year time horizon). However, with the exception of total closure of the DFC, no impacts are expected to occur under any projected decreased level-of-use.

Under each of the level-of-use scenarios, it is evident that the DFC work force will represent a relatively similar or smaller percentage of the projected workforces in the ROI and the City of Lakewood for the year 2015 as compared to the year 1995. This indicates that the employment levels of the ROI and the City of Lakewood will continue to grow, under any of the level-of-use scenarios, and that the DFC work force will assume a similar or a slightly diminished role in the 20 year time horizon. Therefore, the Proposed Action would not be encumbered by employment and income within the ROI. Implementation of the Proposed Action is not anticipated to have any impacts on employment or income in the ROI. The No-Action alternative would have no impact to employment and income within the ROI. Therefore, no impacts to employment and income within the ROI are anticipated to result from implementation of either alternative.

4.4.3 Housing

Increases or decreases in housing are analyzed on a per capita basis. It is assumed that, with the exception of total closure of the DFC, no housing-related impacts would result from any decreased level-of-use of the DFC. Potential impacts to housing were assessed based on the quantity or composition of required employees at the DFC associated with the Proposed Action under the moderate growth scenario and the availability of adequate housing opportunities within the ROI. Impacts to housing are considered to occur if the implementation of the Proposed Action under the moderate growth scenarios results in a significant shortage of adequate housing units within the ROI. The following levels of impacts were considered:

None: Implementation of the Proposed Action under the moderate growth scenario has no or a negligible effect on housing within the ROI for this resource.

Insignificant: Implementation of the Proposed Action under the moderate growth scenario results in changes in housing demands that would not exceed the highest historical production level.

Significant: Implementation of the Proposed Action under the moderate growth scenario results in changes in housing demands that would exceed the highest historical annual production level

Beneficial: Implementation of the Proposed Action has a positive effect on the housing within the ROI.

Anticipated Consequences - Impacts to housing within the ROI for this resource could potentially result from increases in the number of employees at the DFC. The Proposed Action is designed to accommodate a 15 percent increase from the current workforce of the DFC under a moderate growth scenario, a steady employment level under the status quo scenario, or a decrease in workforce under a contraction scenario.

Information from the 1990 Census shows that of the 178,611 total housing units within Jefferson County, approximately 6.75 percent were unoccupied (12,056). Within the remaining seven counties of the ROI, the 1990 Census indicates that a total of 639,409 housing units exist, with approximately 9.96 percent being unoccupied (63,685). This data indicates that available housing for occupancy existed as of 1990 within Jefferson County, and an even greater percentage of available housing existed as of 1990 within the rest of the ROI. While increases in population are anticipated to occur within the ROI over the next 20 years, associated growth and development activities are expected to provide increasing housing opportunities for new populations.

Under the moderate growth scenario, the DFC workforce is projected to increase by approximately 776 employees. Although it is likely that a certain percentage of any new employees would already reside within the ROI, it is anticipated that adequate housing requirements will be available within the ROI to accommodate all of the potential new DFC employees. Therefore, the Proposed Action would not be encumbered by housing within the ROI. Implementation of the Proposed Action is not anticipated to have any impacts on housing in the ROI. The No-Action alternative would have no impact to housing within the ROI. Therefore, no impacts to housing within the ROI are anticipated to result from implementation of either alternative.

4.4.4 Community Services

The following assumptions have been made for this resource: demand for community services and facilities is a function of population; community services will remain available for all residents within a specific government jurisdiction; and, except for the total closure of the DFC, no community services-related impacts are expected to result from any decreased level-of-use of the DFC. The methodology employed for existing conditions consists primarily of an inventory assessment utilizing secondary data sources. After information on existing conditions was collected, it was organized and refined to permit an analysis of the adequacy of existing services

and facilities to meet the needs of the current populations within jurisdictions of the ROI. The analysis was based primarily on current local service delivery standards, and the historical conditions that have lead to these service levels. Impacts to community service are considered to occur if the implementation of the Proposed Action under the moderate growth scenarios results in an increased demand for community services above historical demand for community services. The following levels of impacts were considered:

None: Implementation of the Proposed Action under the moderate growth scenario has no or a negligible effect on community service within the ROI for this resource.

Insignificant: The implementation of the Proposed Action under the moderate growth scenario would require additional staffing or equipment investments for community services. It would also result when increased demand requires less than 50 percent of a major capital facility.

Significant: Implementation of Proposed Action under any the moderate growth scenario would result in an increased demand for community services that requires more than 50 percent of a major capital facility.

Beneficial: Implementation of the Proposed Action has a positive effect on the community services within the ROI.

Anticipated Consequences - Impacts to community services (including fire protection, police protection, medical facilities, and educational facilities) within the ROI could potentially result from development and operational activities associated with the Proposed Action.

Fire Protection. Fire protection utilities and response services within the WMFR are presently adequate for existing facilities at the DFC. However, all proposed uses or facilities that involve hazardous materials need to be programmed with the WMFR so that appropriate emergency response measures can be prepared. Fire protection utilities and services may influence planning decisions, but are not expected to present any constraints to future land use or development at the DFC. Therefore, the Proposed Action would not be encumbered by fire protection within the ROI. No impacts relating to fire protection at the DFC are anticipated to occur through the implementation of the Proposed Action. The No-Action alternative would have no impact on fire protection. Therefore, no impacts related to fire protection are anticipated to result from either alternative.

Police Protection. Adequate police protection service is currently provided to the City of Lakewood, including the areas neighboring the DFC, by the City of Lakewood Police Department. As the City continues to grow, it does not anticipate any decrease in the level of police protection services. The Federal Protective Service is responsible for providing/managing security services within the DFC. The Federal Protective Service determines and maintains an appropriate level of security for the DFC. The Federal Protective Service can increase the level of security at the DFC is it determined to be necessary. Therefore, the Proposed Action would not be encumbered by police protection within the ROI. No impacts relating to police protection services are anticipated to occur through the implementation of the Proposed Action. The No-Action alternative would have no impact on police protection. Therefore, no impacts related to police protection are anticipated to result from implementation of either alternative.

Medical Facilities. Adequate medical facilities/hospital services currently exist to serve the populations within and near the City of Lakewood. As the population within Lakewood and the surrounding municipalities continue to grow, a need will develop for additional medical facilities. As described in Section 4.4.1 of this document, the increased workforce at the DFC under the "Moderate Growth" level-of-use scenario would represent a smaller percentage of the projected City of Lakewood population in 2015 than the current DFC workforce represents in Lakewood in 1995. Therefore, the Proposed Action would not be encumbered by medical facilities within the ROI. The implementation of the Proposed Action is not anticipated to result in any impacts related medical facilities/services. The No-Action alternative would have no impact to medical facilities. Therefore, no impacts to medical facilities are anticipated to result from implementation of either alternative.

Educational Facilities. Adequate educational facilities and services currently exist to serve the populations within Jefferson County and the City of Lakewood. As the population within Jefferson County and the City of Lakewood continue to grow, a need will develop for additional educational facilities and services. As described in Section 4.4.1 of this document, the increased workforce at the DFC under the "Moderate Growth" level-of-use scenario would represent a smaller percentage of the projected City of Lakewood population in 2015 than the current DFC workforce represents in Lakewood in 1995. Therefore, the Proposed Action would not be encumbered by educational facilities within the ROI. The implementation of the Proposed Action is not anticipated to result in any impacts to educational facilities/services. The No-Action alternative would have no impact to educational facilities. Therefore, no impacts to educational facilities are anticipated to result from implementation of either alternative.

4.4.5 Recreation Resources

Recreation participation is generally assumed to be directly proportional to growth in population. This analysis is limited to the recreational resources within the DFC, the City of Lakewood, and Jefferson County, as they have the greatest potential to be affected by the Proposed Action and they are assumed to be generally representative of the typical recreational resources within the DMA. It is also assumed that, except for the total closure of the DFC, no recreation-related impacts are expected to result from any decreased level-of-use of the DFC. The analysis of recreation applied ratios of current and potential on-site population to existing recreational facilities/opportunities to evaluate generalized supply and demand of recreational resources. Recreational resources are assessed based on the types and capacity of existing recreational resources within the DFC and the surrounding communities. Impacts are considered to occur if the implementation of the Proposed Action results in an increase in demand for recreational resources that cannot be met by existing or planned recreational resources. The following levels of impacts were considered:

None: Implementation of the Proposed Action has no or a negligible effect on recreation within the ROI.

Insignificant: Implementation of the Proposed Action could require the redesign of existing parklands, additional part-time staff, or upgrading of existing facilities. Capital expenditures could be required for upgrading parks and/or facilities, as well as increase operations and maintenance costs.

Significant: Implementation of the Proposed Action would require the construction or purchase of new facilities, additional full-time staff, or the purchase of additional parkland. Capital expenditures would be required for acquisition or development of new facilities, and operations and maintenance costs would increase.

Beneficial: Implementation of the Proposed Action has a positive effect on recreation within the ROI.

Anticipated Consequences - Impacts to recreation within the ROI for this resource could potentially result from development and operational activities associated with the Proposed Action. Within the DFC, existing recreational facilities consists of a network of bicycle and exercise trails, the DFC Wellness Center, and the two ball fields (see Figure 14 for locations). Under the Proposed Action, the location of the two ball fields is designated as a Stage III development district. The Proposed Action does not provide any comparable recreational facilities to compensate for the loss of these two ball fields. Therefore, the implementation of the Proposed Action in a portion of the Stage I development districts may be encumbered by a recreational resources. However, the Proposed Action does provide for an expansion of the existing bicycle/exercise trail network. No other existing recreational opportunities would be eliminated through the implementation of the Proposed Action.

Adequate recreational facilities and services currently exist to serve the populations within Jefferson County and the City of Lakewood, as described in Section 3.4.5 and Appendix C. As the population within Jefferson County and the City of Lakewood continue to grow, a need will develop for additional recreational facilities and services. Both the city and county have planned for the expansion of recreational resources and open space areas to service the growing populations (refer to Section 3.4.5 for more information). As described in Section 4.4.1, the increased workforce at the DFC under the "Moderate Growth" level-of-use scenario, would represent a smaller percentage of the projected City of Lakewood population in 2015 than the current DFC workforce represents in Lakewood in 1995. The Proposed Action under the moderate growth scenario is not anticipated to result in any impacts to recreational facilities/services. The No-Action alternative would have no impact to recreational facilities. Therefore, no impacts to recreational facilities are anticipated to result from implementation of either alternative.

4.4.6 Land Use

Primary and secondary data sources were analyzed to determine existing development patterns, trends, land use constraints, and potential development opportunities. Local government regulations and the DFC planning policy documents were also analyzed. Potential impacts to land use within the DFC or the surrounding areas are assessed based on the intensity, types, and location of land use districts associated with the Proposed Action. Impacts are considered to occur if the implementation of the Proposed Action is not consistent with existing land use plans at the DFC and/or surrounding areas, or results in any internal or external land use conflicts. Potential impacts related to known or suspected areas of contamination at the DFC were assessed based on the intensity and types of land use associated with the Proposed Action in or adjacent to areas where contamination-related encumbrances are known or suspected to exist.

A site characterization and assessment study is currently underway to confirm the presence, type, and extent of any contamination at the DFC. In addition, this study will lead to a determination of what, if any, environmental remediation measures are required by the State of Colorado Department of Public Health and Environment to mitigate the potential of human exposure to any contamination at the DFC. The CDPHE and GSA are signed a Final Consent Order on July 18, 1997 to establish schedules and requirements for conducting further site characterization and remediation measures (see Section 1.4). It is assumed that any required environmental remediation measures located on land designated in the Proposed Action for future development or public use, will be conducted prior to its actual development or public use. Impacts are considered to occur if the implementation of Proposed Action increases the potential of human exposure to hazardous materials. The following levels of impacts were considered:

None: Implementation of the Proposed Action has no or a negligible effect on existing land use within the ROI for this resource and will not be restricted by any known or suspected contamination-related encumbrances.

Insignificant: Implementation of the Proposed Action is consistent with existing land use plans at the DFC and surrounding areas, but could result in some minor land use conflicts within the ROI. The level of impact is also considered to be insignificant if less than 25 percent of the land designated for future development or public use in the proposed master site plan is affected by contamination-related encumbrances following the results of site characterization studies and the implementation of any required remediation measures.

Significant: Implementation of the Proposed Action is not consistent with existing land use plans at the DFC and/or surrounding areas, and results in land use conflicts within the ROI. The level of impact is also considered to be significant if more than 25 percent of the land designated for future development or public use in the proposed master site plan is affected by contamination-related encumbrances following the results of site characterization studies and the implementation of any required remediation measures.

Beneficial: Implementation of the Proposed Action has a positive effect on existing land uses within the ROI, or decreases the potential of human exposure within the ROI to known or suspected contamination at the DFC.

Anticipated Consequences - Impacts to land use could potentially result from development and operational activities associated with the Proposed Action. In the proposed master site plan, future growth at the DFC would occur within the designated Stage I, II, and III development districts (see Figure 6). These future development areas comprise approximately 169 acres of the DFC (25.4 percent of total area). The designated future development areas are currently undeveloped or partially developed lands outside of the DFC core area, or vacant land or parking areas within the DFC core area. These lands are currently unused or under utilized with respect to supporting the tenant agencies at the DFC. Development of these designated future development areas would create no foreseeable conflicts with existing land uses either on the DFC or in the surrounding areas. Implementation of the Proposed Action also involves the designation of public use and open space districts at the DFC. In the proposed master site plan, a special use district in the northwest corner of the DFC would be

expanded slightly southwards to provide additional space for future RTD services. This expansion would not create any foreseeable conflicts with existing land uses either on the DFC or within the surrounding areas. The land use districts proposed in the master site plan are consistent with the existing land use plans/policies for the DFC and surrounding areas. Therefore, implementation of the Proposed Action is not anticipated to have any adverse impacts within the ROI related to proposed or present land uses at the DFC.

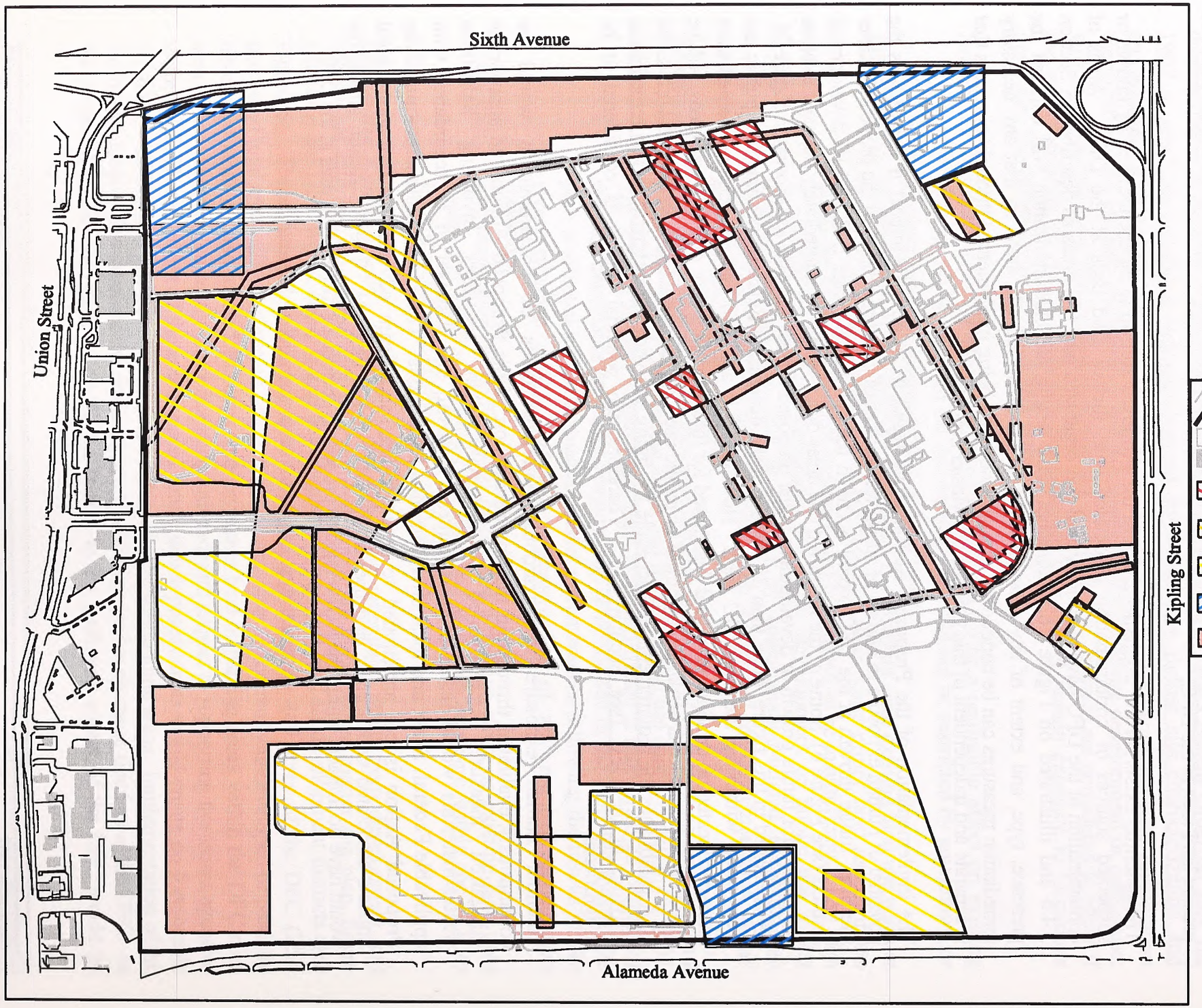
The potential exists for the implementation of the Proposed Action to be encumbered by known or suspected sources of contamination associated with former land uses at the DFC. Areas of contamination at the DFC have been identified and organized into OU areas as described in Section 3.4.6 and illustrated on Figure 16. Additional field testing/site characterization will confirm the presence, type, and extent of any contamination at the identified OU areas so that any necessary remediation measures can be conducted. These actions are being implemented through a process that is separate and independent of this EIS and the Master Site Plan.

The implementation of the Proposed Action could result in an adverse impact if it increases the potential of human exposure to known or suspected sources of contamination. In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Some of the identified OU areas occur within or immediately adjacent to areas designated for future growth or development in the proposed master site plan as shown on Figure 26. As illustrated in this figure, more than 25 percent of the designated future development or public use areas occur within the identified OU areas. However, it is assumed that any required remediation measures located on or adjacent to land designated for future development or public use areas, will be implemented prior to its actual development or public use. The Consent Order between CDPHE and GSA establishes the requirements and schedule for future site-wide characterization and remediation activities at the DFC (see Section 1.4). Therefore, the potential impact is considered to be insignificant.

Potential human exposure to hazardous materials/sources of contamination would be continuously evaluated throughout the implementation of the Proposed Action and appropriate mitigation measures implemented if necessary. Any activities involving hazardous wastes/materials would result in their control, removal, and disposal of in accordance with applicable Federal, State, and local environmental regulations. Therefore, implementation of the Proposed Action is not anticipated to result in any significant adverse contamination-related impacts associated with former land uses at the DFC within the ROI. The No-Action alternative would have no impacts within the ROI related to proposed, present, or former land uses at the DFC.

OUs Located Within or Near Proposed Areas of Development and Public Use

Figure 26



4.4.7 Infrastructure/Utilities

The adequacy of existing facilities was evaluated by comparing the existing utility capacities with current and anticipated demand for services. Potential impacts to infrastructure/utilities are assessed based on the types and capacity of existing infrastructure/utilities within the DFC and the surrounding areas, and the projected demands for infrastructure/utilities associated with the Proposed Action. Impacts are considered to occur if the implementation of the Proposed Action results in a measurable change in demand for infrastructure/utilities. The following levels of impacts were considered:

None: Implementation of the Proposed Action has no or a negligible effect on infrastructure/utilities within the ROI for this resource.

Insignificant: Implementation of the Proposed Action could overload existing facilities for protracted periods, causing isolated failures and corresponding reductions in service. New equipment or facilities or expansions of existing facilities could be needed.

Significant: Implementation of the Proposed Action would cause major disruptions of service and serious degradation of existing performance characteristics. Major new facilities and equipment would be required.

Beneficial: Implementation of the Proposed Action has a positive effect on infrastructure/utilities within the ROI.

Anticipated Consequences - Impacts to infrastructure/utilities (including potable water, sanitary sewer, storm sewer, gas, electricity/communication, and the abandoned steam system) within the ROI for this resource could potentially result from development and operational activities associated with the Proposed Action that exceed the existing capacities.

Potable Water. In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Water line infrastructure has been identified throughout the DFC property as depicted on Figure 18. The presence of water line infrastructure in a proposed future development district does not represent a potential encumbrance to future development. A water line capacity analysis will be required for each proposed development that would utilize existing water line infrastructure, based upon the specific water requirements of the proposed development. Beneficial impacts will result where a Proposed Action requires the improvement or upgrading of the water line infrastructure. Therefore, the Proposed Action would not be encumbered by potable water infrastructure within the ROI. Implementation of the Proposed Action is anticipated to have either no impact or a beneficial impact on the water line infrastructure. The No-Action alternative would have no impact on the water line infrastructure. Therefore, no adverse impacts to the water line infrastructure are anticipated to result from implementation of either alternative.

Sanitary Sewer. In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Sanitary sewer infrastructure has been identified throughout the DFC property as depicted on Figure 18. The presence of sanitary sewer infrastructure in a proposed future development district does not represent a potential encumbrance to future development. A sanitary sewer capacity analysis will be required for each proposed

development that would utilize existing sanitary sewer infrastructure based upon the specific sanitary sewer infrastructure requirements of the proposed development. Beneficial impacts will result where a Proposed Action requires the improvement or upgrading of the sanitary sewer infrastructure. Therefore, the Proposed Action would not be encumbered by sanitary sewer infrastructure within the ROI. Implementation of the Proposed Action is anticipated to have either no impact or a beneficial impact on the sanitary sewer infrastructure. The No-Action alternative would have no impact on the sanitary sewer infrastructure. Therefore, no adverse impacts to the sanitary sewer infrastructure are anticipated to result from implementation of either alternative.

Storm Sewer. In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Storm sewer infrastructure has been identified throughout the DFC property as depicted on Figure 19. The presence of storm sewer infrastructure in a proposed future development district does not represent a potential encumbrance to future development. A storm sewer capacity analysis will be required for each proposed development that would utilize existing storm sewer infrastructure based upon the proposed site plan and the specific storm sewer requirements of the proposed development. Beneficial impacts will result where a Proposed Action requires the improvement or upgrading of the storm sewer infrastructure. Therefore, the Proposed Action would not be encumbered by storm sewer infrastructure within the ROI. Implementation of the Proposed Action is anticipated to have either no impact or a beneficial impact on the storm sewer infrastructure. The No-Action alternative would have no impact on the storm sewer infrastructure. Therefore, no adverse impacts to the storm sewer infrastructure are anticipated to result from implementation of either alternative.

Natural Gas. In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Natural gas utility infrastructure has been identified throughout the DFC property as depicted on Figure 20. The presence of natural gas lines in a proposed future development district does not represent a potential encumbrance to future development. However, the presence of underground natural gas utility lines within a proposed development district will require safety considerations/precautions prior to the initiation of any development activity. The exact location of buried natural gas lines must be determined in advance of any excavation or earth moving activities. In addition, individual utility capacity analyses will be required for each proposed development that would utilize existing natural gas infrastructure, based upon the specific natural gas utility requirements of the proposed development. Beneficial impacts will result where a Proposed Action requires the improvement or upgrading of natural gas. Therefore, the Proposed Action would not be encumbered by natural gas infrastructure within the ROI. Implementation of the Proposed Action is anticipated to have either no impact or a beneficial impact on the natural gas infrastructure. The No-Action alternative would have no impact on the natural gas infrastructure. Therefore, no adverse impacts to the natural gas infrastructure are anticipated to result from implementation of either alternative.

Electricity/Communication. In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). Electricity/communication utility infrastructure has been identified throughout the DFC property as depicted on Figure 21. The presence of electrical/communication lines in a proposed future development district does not represent a potential encumbrance to future development. However, the presence of underground

utility lines within a proposed development district will require safety considerations/precautions prior to the initiation of any development activity. The exact location of buried electric/communication lines must be determined in advance of any excavation or earth-moving activities. In addition, individual utility capacity analyses will be required for each proposed development that would utilize existing electric/communication utility infrastructure based upon the specific requirements of the proposed development. Beneficial impacts will result where a Proposed Action requires the improvement or upgrading of electric/communication infrastructure. Therefore, the Proposed Action would not be encumbered by electric/communication infrastructure within the ROI. Implementation of the Proposed Action is anticipated to have either no impact or a beneficial impact on the electric/communication infrastructure. The No-Action alternative would have no impact on the electric/communication infrastructure. Therefore, no adverse impacts to the electric/communication infrastructure are anticipated to result from implementation of either alternative.

Abandoned Steam System. A determination of asbestos abatement will be required as abandoned steam lines are disturbed and a survey is conducted to indicate the friability and other relevant properties of the insulation material. The exact location of abandoned steam lines must be identified when evaluating future site planning efforts. The additional expense and regulatory requirements of asbestos abatement may have the potential to influence future site planning decisions when a development option requires the removal of the steam lines. Therefore, the abandoned steam lines represent a potential encumbrance to future land use and development that must be addressed during future planning decisions/development activities.

In the proposed master site plan, future growth at the DFC would occur in the designated Stage I, II, and III development districts (see Figure 6). The abandoned steam system infrastructure has been identified as existing in the Stage I development district in the Central Core of the DFC, the Stage I, II, and III development districts in the western side of the DFC, and the Stage III development district in the southern side of the DFC (Figure 22). As these lines are no longer in use and are not expected to be used again, implementation of the Proposed Action would have no impact on this abandoned infrastructure system. It is anticipated that implementation of the Proposed Action will require the removal of abandoned steam lines in some locations. Beneficial impacts are possible if the implementation of the Proposed Action results in the removal and disposal of the asbestos-laden steam lines occurs in accordance with Federal and State regulations. As the required steam line removal mitigation measures will be determined based upon development site plans and configurations to be proposed in the future, it is presently unknown what, if any, beneficial impacts may result from the Proposed Action. Therefore, implementation of the Proposed Action is anticipated to have no impact, as well as possible beneficial impacts on the abandoned steam system infrastructure. The No-Action alternative would have no impact on the abandoned steam system infrastructure. Therefore, no adverse impacts to the abandoned steam system infrastructure are anticipated to result from implementation of either alternative.

4.5 Transportation and Traffic

Potential impacts to transportation and traffic are assessed based on the capacity of existing transportation resources within the DFC and the surrounding areas, and the projected demands for transportation resources associated with the Proposed Action. Impacts are considered to occur if the

implementation of the Proposed Action results in a demand for a transportation resource that cannot be satisfied by existing or planned transportation resources. The following levels of impacts were considered:

None: Implementation of the Proposed Action has no or a negligible effect on transportation/traffic within the ROI for this resource.

Insignificant: Implementation of the Proposed Action results in a noticeable change in existing transportation/traffic conditions that require site-specific repairs or maintenance due to deterioration.

Significant: Implementation of the Proposed Action results in a severe change in existing transportation/traffic conditions requiring extensive reconstruction or substantial increase in the overall maintenance cycle.

Beneficial: Implementation of the Proposed Action has a positive effect on transportation/traffic within the ROI.

Anticipated Consequences - Impacts to transportation/traffic within the ROI could potentially result from development and operational activities associated with the Proposed Action that exceed the existing roadway and parking capacities. The master site plan process included the development of a DFC Master Transportation Plan. This plan redesigns the on-site circulation system to maximize efficiency of movement through better organization and integration of the various uses at the DFC and to minimize the impacts of the growing traffic flows on adjacent off-site roadways. Circulation elements of the plan include the establishment of a hierarchy of roadway systems, a network of pedestrian walkway connections, and the redefinition of bus routes, as well as numerous improvements and mitigations.

As described in the Master Transportation Plan, traffic conditions on the roadways adjacent to the DFC are anticipated to worsen over the next twenty years, due to projected population growth and increased development activity within the region independent of future actions at the DFC. Increases in traffic due to the Proposed Action are anticipated to marginally contribute to the total traffic volumes projected within the region. The projected increases in traffic due to the Proposed Action are not anticipated to produce a significant impact on the traffic conditions of roadways adjacent to the DFC, relative to the total projected increase in traffic on these roadways. However, short-term disruptions to traffic from on-site construction activities are anticipated to result from the Proposed Action. The Master Transportation Plan proposes mitigation measures for the Proposed Action that would help to reduce the traffic impact on adjacent roadways. These measures include the following:

- **Kipling Street/Alameda Avenue:** Add a second left-turn lane to each intersection approach.
- **Kipling Street/Gate #1:** (1) Relocate Gate #1 further north on Kipling Street, (2) Eliminate the northbound left-turn protected phase during the peak p.m. hour.
- **Kipling Street/Gate #2:** Modifications to intersection signal timing.
- **Union Street/North Avenue (Gate #4):** Shift in DFC gate access from Gate #4 to Gate #5.
- **Union Street/Second Place/Center Avenue (Gate #5):** (1) Modifications to intersection signal timing, (2) Add a second left-turn to each intersection approach.
- **Alameda Avenue/Gate #7:** Modifications to intersection signal timing.

In association with the proposed master site plan, a Transportation Demand Management program (TDM) will be initiated at the DFC. The TDM program would be a long-term plan at the DFC to reduce the number of single occupant vehicle trips to the DFC. One of the objectives of the TDM program is to establish coordination of services between GSA, the Denver Regional Council of Governments, and RTD to provide voluntary opportunities for agencies and employees to become aware of and utilize various rideshare and transit programs. This will include the encouraged use of DRCOG's Ride Arranger program for employee commuting trips to the DFC. Ride Arranger presentations will be conducted at the DFC, and all tenant agencies will be encouraged to participate in the programs. The TDM will also involve increased coordination with the RTD, to increase awareness of the existing transit services available to DFC employees. As part of a RTD demonstration project, a computerized RTD information kiosk will be installed in the lobby of Building 67. Coordination between Ride Arrangers and RTD services will also be directed towards the provision of special transportation arrangements for Broncos and Rockies games, and other events. Additional potential TDM programs include: preferential parking for carpool/vanpool; transit subsidy; carpool/vanpool subsidy; telecommuting; compressed work weeks; flexible work hours; staggered work hours; and bicycle and pedestrian programs. Some of these programs are currently in effect at varying levels at the DFC.

The proposed mitigation measures listed above, as well as the TDM measures under consideration would reduce the transportation-related impacts of the Proposed Action on the adjacent roadways. Therefore, the Proposed Action would not be encumbered by transportation resources or traffic within the ROI. It is anticipated that the Proposed Action would not impact transportation and traffic within the ROI. It is anticipated that within the next 20 years, an overall deterioration of traffic conditions will occur on most of the roadways adjacent to the DFC and within the ROI, independent of the Proposed Action. The No-Action alternative would have no impact on the transportation/traffic in the ROI. Therefore, no adverse impacts to the transportation/traffic are anticipated to result from implementation of either alternative.

4.6 Cumulative Impacts

A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future action regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR Part 1508.7). Evaluation of cumulative impacts includes consideration of the Proposed Action with past and present actions, as well as reasonably foreseeable future actions. Compliance with all applicable Federal, State, local, and GSA regulations assists in ensuring that implementation of any of the alternatives would not cumulatively impact past and present actions.

Implementation of the Proposed Action is anticipated to result in direct temporary impacts to several specific environmental resource areas that have the potential to contribute to cumulative impacts. These include air quality, noise, and traffic. Project-related impacts on each of these environmental resources are anticipated to be insignificant with the implementation of the Proposed Action.

Based on the air quality analysis (see Section 4.14), air emissions resulting from the Proposed Action have been determined to be *de minimus* (below Conformity Rule limits). Due to the temporary and/or limited nature of the project-related emissions, these emissions are not anticipated to significantly contribute to cumulative air quality impacts in the DMA.

Development-related noise impacts from temporary development activities and permanent operational activities are not anticipated to be significant. While development-related noise impacts could potentially contribute to cumulative noise impacts in the project area, this is not anticipated to occur due to the temporary and limited nature of the development-related noise impacts.

Temporary traffic disruptions could result from the development activities associated with the Proposed Action. A permanent increase in traffic levels could also result from operational activities associated with the Proposed Action. The Proposed Action includes measures to minimize traffic-related impacts including the expanded use of the on-site RTD facilities, the realignment of Gate #1, and the increased use of Gate #5. With the implementation of these measures and other actions proposed in the Master Transportation Plan, traffic-related impacts are not anticipated to be significant or contribute significantly to cumulative impacts.

Therefore, with the successful implementation of the mitigation measures proposed in this EIS the potential contributions to cumulative impacts from the implementation of the proposed action for any of the evaluated resources are anticipated to be insignificant.

4.7 Unavoidable Adverse Impacts

Implementation of the Proposed Action is not anticipated to result in any significant unavoidable adverse impacts. Development activities associated with the Proposed Action has the potential to result in the loss of some open space. However, land designated for future growth is primarily developed (in-fill development) or previously disturbed.

4.8 Relationship Between Short-Term Use of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

Implementation of the Proposed Action is anticipated to result in development-related activities at the DFC. Construction/renovation activities have the potential to cause temporary disruptions to traffic, land use, noise, and possibly other resources. However, these disruptions will be temporary and the development activities will maintain or generate additional economic productivity in terms of jobs, services, and resources during both the development and operational phases of the Proposed Action.

Implementation of the Proposed Action under any of level-of-use scenario would not preclude future use of existing resources. The Proposed Action is based on a sound utilization of existing

governmental property for administrative, scientific, and logistical functions. Planning for future growth will continue to be an on-going process. Therefore, no tradeoffs between short-term environmental gains at the expense of long-term gains are anticipated to occur.

4.9 Irreversible or Irretrievable Commitments of Resources

Implementation of the Proposed Action would result in both direct and indirect commitments of resources. In some cases, the resources committed would be recovered within a relatively short period of time. In others, resources could be irreversibly or irretrievably committed by virtue of being consumed or by the apparent limitlessness of the period of their commitment to a specific use. Irreversible and irretrievable commitments of resources can sometimes be compensated for by the provision of other resources with substantially the same use or value.

Irreversible and/or irretrievable commitment of resources associated with the implementation of the Proposed Action under any level-of-use scenario includes the materials, utilities, economic resources, labor, and time expended in the design and construction of the facilities and future operation and maintenance of the building systems. Although new development will likely be permanent in design, any new buildings could be removed, if necessary, without inflicting permanent damage to the land. Therefore, no significant irreversible or irretrievable commitments of resources are expected.

4.10 Conflicts with Federal, Regional, State, Local, or Indian Tribe Land Use Plans, Policies, and Controls

Implementation of the Proposed Action under any of the level-of-use scenarios is not anticipated to result in any land use conflicts with any existing Federal, regional, state, local or Indian Tribe land use plans, policies, or controls. On the other hand, the implementation of the Proposed Action under any of the level-of-use scenarios could help the DFC comply with several recent Federal policies. Specifically, a number of the goals and objectives established in the Master Site Plan would provide beneficial impacts with respect to enhancing the environment. The following are examples of the Master Site Plan elements that would enhance environmental conditions.

- Implementation would aid in reducing the number of vehicle trips to and from the site with an attendant reduction in vehicle emissions.
- The inclusion of coordinated transportation planning activities with RTD would also aid in reducing vehicle trips and vehicle emissions.
- The provision of safe and effective transportation linkages would encourage the use of bicycles and pedestrian access would further reduce vehicle trips and vehicle emissions.
- The requirements related to stormwater management would result in enhanced erosion control and reduced sedimentation which would help to protect water quality.
- The development of additional stormwater detention basins could result in the creation of wetlands and the provision of habitat.
- The incorporation of water conservation measures would help reduce the demand for future water supplies and would reduce the amount of water-born wastes requiring treatment and disposal.
- The identification of possible locations for materials management and recycling would reduce the amount of solid waste that has to be transported to and managed in a landfill.

There are also a number of provisions associated with the Master Site Plan that would help reduce potential sources of pollution. Appendix D provides examples of the different pollution prevention (P2) measures that would be supported through implementation of the Proposed Action under any of the level-of-use scenarios.

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Section 5: Conclusion

5.0 Conclusion

Implementation of the proposed master site plan is anticipated to result in an insignificant level of impact to the following resource areas: Hydrology and Water Quality; and Land Use. These insignificant impacts are derived from the known and suspected sources of contamination at the DFC associated with former land uses at the site. These impacts are the subject of an independent investigation at the DFC that will result in the implementation of site-wide remediation activities. The anticipated impacts associated with the Proposed Action and the No-Action alternative for each of the evaluated resources is shown in Table 23 In addition, an insignificant level of cumulative impacts is expected to result from the implementation of the proposed master site plan.

Table 23: Matrix of Impacts

Resource Areas	Alternatives	
	Proposed Action	No-Action
Topography	N	N
Soils	N	N
Hydrology and Water Quality	I	N
Air Quality	N	N
Noise	N	N
Vegetation	N	N
Wetlands	N	N
Wildlife Resources	N	N
Threatened and Endangered Species	N	N
Cultural Resources	N	N
Population	N	N
Employment and Income	N	N
Housing	N	N
Community Services	N	N
Recreation Resources	N	N
Land Use	I	N
Infrastructure/Utilities	N	N
Transportation and Traffic	N	N

N = No Adverse Impacts
I = Insignificant Adverse Impacts
S = Significant Adverse Impacts
B = Beneficial Impacts

To fully implement the proposed master site plan, there are various potential use-encumbrances at the DFC associated with certain environmental resources that must be addressed. As shown in Table 24, the identified use-encumbrances (see Section 3.7 for detailed information) have been compared to the designated land use districts proposed in the master site plan. Several of the identified use-encumbrances occur within proposed future development and special use districts. These encumbrances are associated with the following resources: hydrology and water quality; cultural resources; recreation resources; and land use. No use-encumbrances are identified within the proposed master site plan's designated open space district. No off-site resources have been identified that possess an encumbrance to the implementation of the Proposed Action.

Table 24: Identified Encumbrances within the Proposed Land Use Districts

Proposed Land Use Districts	Resource Area- Potential Encumbrances																		
	Topography	Soils	Hydrology/Water Quality	Air Quality	Noise	Vegetation	Wetlands	Wildlife Resources	T. and E. Species	Cultural Resources	Population	Employment and Income	Housing	Community Services	Recreation Resources	Land Use	Infrastructure/Utilities	Transportation & Traffic
Entire Facility: 670 acres			♦							♦					♦	♦		
Central Core District: 166.5 acres																		
Open Space District: 263 acres																		
Public Use District: 50.5 acres																♦		
Future Development Districts																		
Stage I: 18.5 acres										♦						♦	♦	
Stage II: 54.5 acres			♦													♦	♦	
Stage III: 96 acres			♦												♦	♦	♦	
Off Site Encumbrances																		

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Section 6: Glossary and Acronyms

6.0 Glossary and Acronyms

This section contains a list of definitions for terms referenced in or of relevance to this document. This section also contains a list of the acronyms and abbreviations that appear within this document.

6.1 Glossary

100-Year Floodplain - Land area having a one percent chance of being flooded during a given year.

Aesthetics - Referring to the perception of beauty.

Aggregate - Materials such as sand, gravel, or crushed stone used for mixing with a cementing material to form concrete or alone as railroad ballast or graded fill.

Alluvium - Clay, silt, sand, gravel, or similar material deposited by running water.

Ambient Air Quality Standards - Standards established on a state or Federal level that define the limits for airborne concentrations of designated "criteria" pollutants to protect public health with an adequate margin of safety (primary standards) and to protect public welfare, including plant and animal life, visibility, and materials (secondary standards).

Aquifer - The water-bearing portion of subsurface earth material that yields or is capable of yielding useful quantities of water to wells.

Archaeology - A scientific approach to the study of human ecology, cultural history, and cultural processes.

Arterial - Signalized street that serves primarily through-traffic and provides access to abutting properties as a secondary function.

Asbestos - A carcinogenic substance formerly used widely as an insulation material by the construction industry; often found in older buildings.

Association - Two or more soils occurring together in a characteristic pattern.

Attainment Area - A region that meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act.

Buffering - May include fences, walls, landscaping, grade separation, and additional setbacks used to separate a lower-intensity use from a higher-intensity use.

Commercial Land Use - Commerce, business, and services including retail and office establishments, restaurants, and entertainment.

Conformity - Conformity is defined in the Clean Air Act as the action's compliance with an implementation plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of such standards; and that such activities will not: (1) cause or contribute to any new violation of any standard in any area; (2) increase the frequency or severity of any existing violation of any standard in any area; or (3) delay timely attainment of any standard or any required interim emission reduction or other milestones in any area.

Contaminants - Undesirable substances rendering something unfit for use.

Council on Environmental Quality (CEQ) - Established by the National Environmental Policy Act (NEPA) the CEQ consists of three members appointed by the President. CEQ regulations (40 CFR Parts 1500-1508, as of July 1, 1986) describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and the timing and extent of public participation.

Cultural Resources - Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or a community for scientific, traditional, religious, or any other reason.

Decibel (dB) - A unit of measurement on a logarithmic scale which describes the magnitude of a particular quantity of sound pressure or power with respect to a standard reference value.

Developed Parks - Parks improved to their final, intended use such as Bear Creek Lake Park or Lakewood Park.

Effluent - Waste material discharged into the environment.

Endangered Species - A species that is threatened with extinction throughout all or a significant portion of its range.

Greenway - A strip of public land which is not in public rights-of-way and which serves as a scenic or visual link.

Groundwater - Water within the earth that supplies wells and springs.

Hazardous Material - Generally, a substance or mixture of substances that has the capability of either causing or significantly contributing to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or posing a substantial present or potential risk to human health or the environment. Use of these materials is regulated by the U.S. Department of Transportation (DOT), the Occupational Safety and Health Administration (OSHA), and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

Hazardous Waste - A waste, or combination of wastes, which because of its quantity, concentration, or physical, chemical, or toxic characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Regulated under the Resource Conservation and Recovery Act (RCRA).

High Occupancy Vehicles Lane - Lanes reserved for buses, shuttles, or car-pool vehicles normally operating during selected hours of the day.

Industrial - Heavy: intensive, noxious, noisy, or unsightly industrial/manufacturing uses (e.g., steel mill, automobile wrecking/crushing, etc.); Medium: industry which does not result in significant, adverse impacts upon the surrounding areas; uses outside storage which is screened; Light: light assembly, research, and development which is clean, quiet, and conducted primarily within a building.

Infrastructure - Basic installations and facilities such as roads, drainage, utilities, transportation, and communication systems.

Linear Park - Areas serving as connecting links to other parks and/or trails developed for hiking or biking.

Mass Transit - A system that uses a variety of vehicles (other than the private automobile) to move large numbers of people.

National Priorities List - The EPA's list of sites where hazardous substances, pollutants, or contaminants appear to pose a substantial threat to human health, welfare, or the environment, and require response under CERCLA.

National Register of Historic Places - A register of districts, sites, buildings, structures, and objects important in American history, architecture, archaeology, and culture, maintained by the Secretary of the Interior under authority of Section 2(b) of the Historic Sites Act of 1935 and Section 101 (a) (1) of the National Historic Preservation Act of 1966, as amended.

Native Americans - Used in a collective sense to refer to individuals, bans, or tribes who trace their ancestry to indigenous populations of North America prior to Euro-American contact.

National Environmental Policy Act (NEPA) - Public Law 91-190, passed by Congress in 1969. The Act establishes a national policy designed to encourage consideration of the influences of human activities on the natural environment. NEPA also established the Council on Environmental Quality. NEPA procedures require that environmental information be made available to the public before decisions are made. Information contained in NEPA documents must focus on the relevant issues in order to facilitate the decision-making process.

Natural Vegetation - Plant life that occurs naturally in an area without agricultural or cultivational efforts. It does not included plant species that have been introduced from other geographical areas and become naturalized.

Noise - Any sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying (unwanted sound).

Noise Attenuation - The reduction of a noise level from a source by such a means as distance, ground effects, or shielding.

Nonattainment Area - An area that has been designated by the U.S. EPA, or the appropriate state air quality agency, as exceeding one or more National or State Ambient Air Quality Standards.

Open Space Corridors - Greenways which may have trails and preserve environmental sensitive areas.

Parkway - A landscaped strip of public land in a public right-of-ways which serves as a scenic and visual link.

Plume - An elongated mass of contaminated fluid moving with the flow of the fluid.

Potable Water - Water suitable for drinking.

Regional Park - Parks of varying size and location which serve a region larger than the city limits. Regional parks may be left in their natural state or may be urbanized. They may contain campgrounds, picnic areas, trail systems, nature centers, golf courses, and sport fields.

Retail Activities - The sale of goods directly to the consumer.

Riparian - Of, pertaining to, or situated or dwelling on, the bank of a river or other body of water.

Section 106 - A section of the National Historic Preservation Act which establishes a process requiring Federal agencies to consider the effects of their undertakings on cultural resources.

Shrink-Swell Potential - Volume change possible upon wetting or drying of soils.

Soil Series - A group of soils having similar parent materials, genetic horizons, and arrangement in the soil profile.

Solid Waste - Non-hazardous residential, commercial, industrial, and construction refuse, not including materials that are recycled.

State Historic Preservation Officer - The official within each state, authorized by the State at the request of the Secretary of the Interior, to act as liaison for purposes of implementing the National Historic Preservation Act.

Threatened Species - Plant and wildlife species likely to become endangered in the foreseeable future.

Transit Corridors - Major arterials and other corridors identified by the Regional Transportation District and the Colorado Department of Highways, and additional or alternative corridors designated by the community.

Urbanized Parks - Areas designed to serve surrounding residential areas and which meet the leisure needs of those residents by the provision of amenities, such as park benches, tennis courts, or playground equipment.

Wetlands - Areas which are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions.

Wholesale - The sale, storage, and distribution of goods for resale.

Zoning - The division of a municipality (or county) into districts for the purpose of regulating land use, types of building, necessary off-street parking, and other prerequisites to development. Zones are generally shown on a map and the text of the zoning ordinance specifies requirements for each zoning category.

6.2 Acronyms/Abbreviations

1-C	City of Lakewood Zoning Designation - Convenience Commercial
2-C	City of Lakewood Zoning Designation - Neighborhood Commercial
3-C	City of Lakewood Zoning Designation - Community Commercial
1-R	City of Lakewood Zoning Designation - Large Lot Residential
2-R	City of Lakewood Zoning Designation - Small Lot Residential
3-R	City of Lakewood Zoning Designation - High Density Detached/Low Density Attached Residential
4-R	City of Lakewood Zoning Designation - High Density Attached Residential
5-R	City of Lakewood Zoning Designation - High Density Residential
APCD	CDPHE Air Pollution Control Division
APEN	Air Pollution Emission Notice
APHIS	USDA Animal Plant Health Inspection Service
AQCC	Air Quality Control Commission
BLM	DOI Bureau of Land Management
Btu	British Thermal Unit
BOM	DOI Bureau of Mines
BOR	DOI Bureau of Reclamation
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CASU	Cooperative Administrative Support Unit
CCR	Colorado Code of Regulations

CDPHE	Colorado Department of Public Health and the Environment
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CHS	Colorado Historical Society
CO	Carbon Monoxide
Corps	U.S. Army Corps of Engineers
CN	City of Lakewood Zoning Designation - Conservation District
CWA	Clean Water Act
dB	Decibel
dBA	Decibel (A-weighted scale)
DCE	Dichloroethene
DCPA	Defense Civil Preparedness Agency
DFC	Denver Federal Center
DIA	Denver International Airport
DMA	Denver Metropolitan Area
DNAPL	Dense Non-Aqueous Phase Liquid
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOI	U.S. Department of Interior
DOL	U.S. Department of Labor
DOP	Denver Ordnance Plant
DOT	U.S. Department of Transportation
DRCOG	Denver Regional Council of Governments
DVMT	Daily Vehicle Miles Traveled
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAR	Floor Area Ratio
FDA	HHS Food and Drug Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FSS	GSA Federal Supply Service
FWS	DOI U.S. Fish and Wildlife Service
g/VMT	Grams per Vehicle Miles Traveled
gpm	Gallons per Minute
GIS	Geographic Information System
GPO	Government Printing Office
GSA	General Services Administration
gsf	Gross Square Feet
HABS	Historic American Building Survey
HHS	U.S. Department of Health and Human Services
HRS	Hazard Ranking System
IAG	Interagency Agreement
IFMA	International Facilities Management Association

IN	City of Lakewood Zoning Designation - Industrial District
ITS	GSA Information Technology Service
ITWC	Interagency Denver Federal Center Trails and Wildlife Committee
L_{eq}	Equivalent Sound Level
LOS	Level of Service
MMS	DOI Minerals Management Service
MSHA	DOL Mine Safety and Health Administration
NAAQS	National Ambient Air Quality Standards
NARA	National Archives and Record Administration
NAWQA	National Water Quality Assessment
NEIC	EPA National Enforcement Investigation Center
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxide
NOA	Notice of Availability
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NPS	DOI National Park Service
NRCS	USDA Natural Resources Conservation Service (formerly SCS)
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWQL	National Water Quality Laboratory
O_3	Ozone
OCD	Office of Civil Defense
OF	City of Lakewood Zoning Designation - Office District
OPM	Office of Personnel Management
OSHA	Occupational Safety and Health Act
OSM	DOI Office of Surface Mining
OU	Operable Units
PA	Preliminary Assessment
PA/SI	Preliminary Assessment/Site Inspection
PAC	DFC Planning Advisory Committee
Pb	Lead
PBS	GSA Public Building Service
PCBs	Polychlorinated Biphenyls
PD	City of Lakewood Zoning Designation - Planned Development District
PHS	Public Health Service
PM_{10}	Particulate Matter
ppm	Parts per Million
PSC	Public Service Company of Colorado
PSD	Prevention of Significant Deterioration
RAQC	Regional Air Quality Council
RCRA	Resource Conservation and Recovery Act

ROD	Record of Decision
ROI	Region of Influence
ROW	(Railroad) Right of Way
RTD	Regional Transportation District
SARA	Superfund Amendments and Reauthorization Act
SCS	USDA Soil Conservation Service (now the NRCS)
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TCA	Trichloroethane
TCE	Trichlorethylene
TDM	Transportation Demand Management
TSD	Treatment, Storage, or Disposal
UDFCD	Urban Drainage Flood Control District
USARC	U.S. Department of the Army, 6th Brigade, 91st Division
USDA	U.S. Department of Agriculture
USGS	DOI U.S. Geological Survey
UST	Underground Storage Tank
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WAPA	Western Area Power Administration
WMP	Work Management Plan

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Section 7: Agencies and Persons Contacted

7.0 Agencies and Persons Contacted

This section contains a list of personnel from Federal, state and local agencies, and other individuals contacted and/or interviewed during the development of this document.

7.1 Federal Agencies Personnel

Mr. LeRoy W. Carlson, Colorado Field Supervisor
U.S. Department of Interior, Fish and Wildlife Service

Mr. Rick Cushing, Environmental Engineer
U.S. Department of Transportation, Federal Highway Administration

Mr. Al Green
Denver Federal Center Field Office, Facilities Maintenance

7.2 State & Local Agencies Personnel

Mr. Dennis Anderson, Water Quality Specialist
Colorado Department of Public Health and Environment, Water Quality Control Division, Assessment Unit

Mr. Jay Hutchinson, City Engineer
City of Lakewood

Ms. Lynn Kimbrough, Public Relations Specialist
City of Lakewood Police Department

Ms. Linda Litrell, Public Relations Specialist
West Metro Fire Department

7.3 Other Individuals

Mr. Tim Kawakaui,
Public Services Company of Colorado

Mr. Tom Malmberg
Denver Water Board

United States Department of the Interior

FISH AND WILDLIFE SERVICE

ES/CO:T&E Species
Mail Stop 65412

Ecological Services
Colorado Field Office
730 Simms Street, Suite 290
Golden, Colorado 80401

Jess Commerford, AICP
Louis Berger and Associates, Inc.
1819 H Street, NW
Suite 900
Washington, D.C. 20006

Dear Mr. Commerford:

In response to your letter of June 17, 1996, the U.S. Fish and Wildlife Service (Service) is providing comments addressing potential impacts associated with the Master Site Plan Update for the Denver Federal Center in Lakewood, Colorado. These comments have been prepared under the provisions of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et. seq.).

The Service believes that no Federally listed threatened or endangered species will be affected by the project.

If wetlands are to be impacted by the proposed project please contact the U.S. Army Corps of Engineers' Tri-Lakes Project Office at (303) 979-4120.

For possible concerns of the Colorado Division of Wildlife regarding this project please contact Dave Weber at (303) 291-7231.

If the Service can be of further assistance, contact Peter Plage of this office at (303) 231-5280.

Sincerely,

LeRoy W. Carlson
Colorado Field Supervisor

cc: Reading file
Project file

Reference: Peter\T&E\199601

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

December 6, 1996

Ms. Lisa D. Morpurgo
General Services Administration
Rocky Mountain Region
Public Building Service
Building 41, Denver Federal Center
Denver, Colorado 80225

Re: Denver Federal Center, Evaluation under Criteria G
Denver Federal Center, Historic Preservation Plan Outline
Denver Federal Center, Site 5JL.1051 Evaluation

Dear Ms. Morpurgo:

Thank you for your correspondence concerning the above project on the Denver Federal Center.

Our office has reviewed your consultants evaluation of the Denver Federal Center under Criteria G. We concur with their analysis that the Denver Federal Center is not eligible under this criteria. This will conclude the determination of eligibility for the center.

The presented outline for the Historic Preservation Plan for the Denver Federal Center appears to be thorough. One aspect of your over-all planning should include design guidelines or parameters to assist with the design of new structures. By using the established architectural vocabulary established at the Denver Federal Center, new construction will blend with the center's character. This will help maintain design harmony and image of the center in the future.

We concur with the evaluation of your consultant on site 5JL.1051. The site does not meet any eligibility criteria for the National Register of Historic Places. There will be no effect on historic properties with the Groundwater Containment System project.

If we may be of further assistance, please contact Joseph Bell, our Architectural Services Coordinator, at (303) 866-3035.

Sincerely,

James E. Hartmann
State Historic preservation Officer

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Section 8: References

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Section 9: List of Preparers

9.0 List of Preparers

This section contains a list of personnel who participated in the preparation of this document.

9.1 General Services Administration

Lisa Morpurgo, AICP — GSA Denver Federal Center Asset Manager
Expertise: Portfolio Management (8PP)
Responsibility: EIS Manager

9.2 Balloffet and Associates, Inc.

Armando Balloffet, Ph.D., P.E. — President
Education: Ph.D., Water Resources Systems Analysis, 1992
Professional Experience: 25 Years
Responsibility: Project Director

James Jordan — Principal Associate
Education: M.S., Natural Resources Administration, 1973
Professional Experience: 28 Years
Responsibility: NEPA Compliance

Ray Moe — Director of Transportation
Education: B.S., Community Planning, 1972
Professional Experience: 22 Years
Responsibility: Transportation Planning

Greg Potter — Planner
Education: B.A., Environmental Design, 1989
Professional Experience: 6 Years
Responsibility: Land Use/Facility Planning

Deanne Frederickson — Planner
Education: B.S., Landscape Architecture, 1994
Professional Experience: 5 Years
Responsibility: Land Use/Facility Planning

Keith Hangland — Planner
Education: B.S., Resource Economics, 1991
Professional Experience: 5 Years
Responsibility: Noise Measurements/Transportation Planning

9.3 Louis Berger and Associates, Inc.

Larry D. Walker	Vice President
Education:	M.A., Urban Affairs, 1978
Professional Experience:	17 Years
Responsibility:	Principal-in-Charge
Jess Commerford, AICP	Principal Environmental Planner
Education:	M.U.R.P, Urban and Regional Planning, 1990
Professional Experience:	7 Years
Responsibility:	Task Manager
Andrew R. Mavian	Environmental Scientist/Planner
Education:	M.S., Environmental Science, 1992
Professional Experience:	4 Years
Responsibility:	NEPA Compliance/Natural Resources Management
Rhonda Hise	Environmental Planner
Education:	M.C.P., City Planning, 1996
Professional Experience:	2 Years
Responsibility:	NEPA Compliance
Gregg Kneip	Environmental Scientist
Education:	B.S., Wildlife Management, 1994
Professional Experience:	8 Years
Responsibility:	GIS Specialist
David Cotter	Senior Environmental Scientist
Education:	B.S., Mechanical Engineering Technology, 1988
Professional Experience:	10 Years
Responsibility:	Air Quality
Marty Bowers	Historic Architecture Specialist
Education:	M.A., American History, 1975
Professional Experience:	20 Years
Responsibility:	Historical Architecture Studies
Timothy Sara	Cultural Resources Specialist
Education:	M.A., Anthropology, 1974
Professional Experience:	10 Years
Responsibility:	Cultural Resources Studies

David Berg	Architectural Historian
Education:	M.A., History, 1993
Professional Experience:	10 Years
Responsibility:	Cultural Resources Studies

9.4 Cenibark International

Paul Seeley:	President
Education	B.A., Environmental Biology, 1973
Professional Experience:	24 Years
Responsibility:	Water Quality/NEPA Compliance

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Section 10: Distribution

10.0 Distribution

This section includes a list of elected public officials, agencies and organizations, individuals, PAC members, and scoping meeting participants that will receive a copy of the EIS document.

10.1 Elected Officials

The Honorable Dan Schaefer
United States House of Representatives
2353 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Ben Nighthorse Campbell
United States Senate
380 Russell Senate Office Building
Washington, D.C. 20510

The Honorable Wayne Allard
United States Senate
34 Dirkson Senate Office Building
Washington, D.C. 20510

The Honorable Roy. R. Romer
Governor of Colorado
136 State Capitol Building
Denver, Colorado 80203

Senator Michael F. Feeley
13486 West Center Drive
Lakewood, Colorado 80228-2452

Senator Robert Hernandez
4600 West 36th Avenue
Denver Colorado 80212

Senator Sally Hopper
21649 Cabrini Boulevard
Golden Colorado 80401

Senator Bill Schroeder
4420 South Braun Court
Morrison, Colorado 80465

Senator Jim Congrove
P.O. Box 357
Arvada, Colorado 80001

Representative Norma V. Anderson
10415 West Hampden Avenue
Lakewood, Colorado 80227

Representative Vi June
7500 Wilson Court
Westminster, Colorado 80030

Representative Maryanne Keller
4325 Iris Street
Wheat Ridge, Colorado 80033

Representative Mark Paschall
7903 West 62nd Way
Arvada, Colorado 80004

Representative Penn R. Pfiffner
38 South Zinnia Way
Lakewood, Colorado 80228

Representative Shirleen Tucker
615 South Eldridge Street
Lakewood, Colorado 80228

Representative Barry Arrington
5622 Tabor Court
Arvada, Colorado 80002

Mr. John Stone
Jefferson County Board of Commissioners
100 Jefferson County Parkway
Golden, Colorado 80419

Ms. Linda Morton
Mayor, City of Lakewood
445 South Allison Parkway
Lakewood, Colorado 80226-3105

Ms. Gail Schoettler, Chairperson
Colorado Commission of Indian Affairs
Office of Lieutenant Governor
State Capitol, Room 130
Denver, Colorado 80203

10.2 Federal Agencies/Offices

Advisory Council on Historic Preservation
Western Office of Review
Attn.: Mr. Lee Keating
12136 West Bayaud Avenue, Suite 330
Lakewood, Colorado 80228

Advisory Council on Historic Preservation
Eastern Office of Planning and Review
Attn.: Mr. Ralston Cox
1100 Pennsylvania Avenue, NW, Suite 809
Washington, D.C. 20004

DFC Cooperative Administration Support Unit
Attn.: Mr. Tom Algiens, Acting Director
Denver Federal Center
P.O. Box 25305
Denver, Colorado 80225-0305

DFC Development Day Care Center
Attn.: Ms. Judy Fehlman, Director
Denver Federal Center
P.O. Box 25466
Denver, Colorado 80225

DFC Wellness Center
Attn.: Ms. Lisa Clayton, Wellness Coordinator
Denver Federal Center
P.O. Box 25265
Denver, Colorado 80225

Federal Emergency Management Agency
Attn.: Mr. Michael Armstrong, Regional Director
Denver Federal Center
P.O. Box 25267
Denver, Colorado 80225-0267

Federal Emergency Management Agency
Attn.: Ms. Karen Forbes, Historic Preservation Officer
500 C Street, SW, Room 714
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Federal Highway Administration
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DENVER FEDERAL CENTER

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Appendix A: Plant Species Identified on the DFC

A.0
Plant Species Identified on the Denver Federal Center

Scientific Name	Common Name	Life Form	Native/ Introduced	Id. Source
DECIDUOUS TREES				
Acer negundo	box elder	Perennial	N	2, 3, 4
Acer rubrum	red maple	Perennial	I	4
Acer sacharinum	silver maple	Perennial	I	4
Acer sacharum	sugar maple	Perennial	I	4
Acer sp.	emerald queen maple	Perennial	I	4
Catalpa sp.	catalpa	Perennial	I	1,4
Celtis sp.	hackberry	Perennial	N	1,4
Celtis reticulata	netleaf hackberry	Perennial	N	2, 3
Cercis canadensis	redbud	Perennial	I	4
Crataegus sp.	hawthorn	Perennial	N	4
Elaeagnus angustifolia	Russian olive	Perennial	I	1, 2, 3, 4
Fraxinus pennsylvanica	green ash	Perennial	N	2, 3, 4
Gleditsia sp.	thornless honeylocust	Perennial	I	1, 4
Gleditsia sp.	mordine honeylocust	Perennial	I	1 .
Juglans nigra	black walnut	Perennial	I	4
Koelreuteria paniculata	golden rain tree	Perennial	I	4
Larix laricina	larch	Perennial	I	4
Malus pumila var.	apple	Perennial	I	1
Malus sp.	flowering crabapple	Perennial	I	1, 4
Populus acuminata	smooth-barked cottonwood	Perennial	N	4
Populus deltoides	eastern cottonwood	Perennial	N	4
Populus sargentii	plains cottonwood	Perennial	N	2, 3
Populus sp.	cottonless cottonwood	Perennial	N	1, 3
Populus tremoides	quaking aspen	Perennial	N	1, 4
Prunus perscia var.	peach	Perennial	I	1
Prunus sp.	purple plum	Perennial	I	1
Quercus gambelii	gambel oak	Perennial	N	4
Quercus macrocarpa	bur oak	Perennial	I	1, 4
Quercus rubra	northern red oak	Perennial	I	1, 4
Robinia pseudoacacia	black locust	Perennial	I	2, 3, 4
Robinia pseudoacacia	black locust	Perennial	I	2, 3, 4
Salix alba	willow	Perennial	I	2, 3
Salix exigua	sandbar willow	Perennial	N	2
Salix fragilis	crack willow	Perennial	I	3
Sorbus sp.	mountain ash	Perennial	N	1
Tamarix chinensis	tamarisk salt cedar	Perennial	I	4
Tilia cordata	little leaf linden	Perennial	I	1
Tilia sp.	linden/basswood	Perennial	I	4
Ulmus americana	American elm	Perennial	I	1
Ulmus parvifolia	Chinese elm	Perennial	I	1
Ulums pumila	Siberian elm	Perennial	I	2, 3
Ulmus sp.	elm	Perennial	I	4
EVERGREEN TREES				
Abies concolor	white fir	Perennial	N	4
Juniperus chnensis var.	pfizers	Perennial	I	1
Juniperus sp. var.	upright juniper	Perennial	I	1, 4

Scientific Name	Common Name	Life Form	Native/ Introduced	Id. Source
Juniperous monsperma	one-seeded juniper	Perennial	N	4
Picea pungens	blue spruce	Perennial	N	1, 4
Pinus contorta	lodgepole pine	Perennial	N	4
Pinus edulis	pinyon pine	Perennial	N	1, 4
Pinus flexilis	limber pine	Perennial	N	4
Pinus nigra	Austrian pine	Perennial	I	1
Pinus ponderosa	ponderosa pine	Perennial	N	1
SHRUBS				
Atriples canescens	scattered four-winged saltbrush	Perennial	N	2
Chrysothamnus nauseosus	gray rabbitbrush	Perennial	N	2, 3
Cornus sp.	dogwood	Perennial	N	1, 4
Forsythia sp.	forsythia	Perennial	I	4
Gutierrezia sarothrae	snakeweed	Perennial	N	2, 3
Hydrangea sp.	snowball	Perennial	N	1
Ligustrum vulgare	privet	Perennial	I	1
Mahonia sp.	barberry	Perennial	N	1
Parthenocissus inserta	Virginia creeper	Perennial	N	3
Potenilla sp.	potenilla	Perennial	N	1
Prunus virginiana	chokecherry	Perennial	N	2, 3
Rhus typhina.	staghorn sumac	Perennial	N	1, 4
Rhus trilobata	skunkbrush	Perennial	N	2, 3
Ribes aureum	golden current	Perennial	N	2, 3, 4
Rosa woodsii	prickly rose/Woods rose	Perennial	N	2, 3
Rosa sp.	rose	Perennial	N	1, 2 , 4
Symphoricarpos occidentalis	buckbrush	Perennial	N	2
Symphoricarpos alba	snowberry	Perennial	N	3
Syringa sp.	lilac	Perennial	N	1, 4
HERBACEOUS VEGETATION				
Aesclepias speciosa	showy milkweed	Perennial	N	2
Amaranthus retroflexus	rough pigweed	Perennial	N	2, 3
Ambrosia psilostachya	western ragweed	Perennial	N	2, 3
Argemone polyanthemos	prickly poppy	An./Bi/Pe.	N	2
Artemisia ludoviciana	prairie sage	Perennial	N	2, 3
Aster falcatus	sickle-shaped aster	Perennial	N	2, 3
Aster hesperius	wester willow aster	Perennial	N	2
Bidens frondosa	leafy beggars-tick	Annual	N	2, 3
Carduus nutans	musk thistle	Biennial	I	2, 3
Chenopium incanum	goosefoot	Annual	N	2, 3
Cirsium avense	Canada thistle	Perennial	I	2, 3
Cirsium flodmannii	Flodman's thistle	Perennial	N	2
Clematis occidentalis	clematis	Perennial	N	2, 3
Conium maculatum	poison hemlock	Biennial	I	2, 3
Convolvus arvensis	field bindweed	Perennial	I	2, 3
Dipsacus sylvestris	teasel	Biennial	I	2
Echniocystis lobata	mock cucumber	Annual	N	2
Epilobium sp.	willowherb	Perennial	N	2
Eriogonum effusum	bushy buckwheat	Perennial	N	2
Gallium sp.	bedstraw	Annual	N	2
Glycyrrhiza lepidota	wild licorice	Perennial	N	2, 3
Grindelia squarrosa	gumweed	Biennial	N	3
Guara parviflora	velvety gaura	Annual	N	2
Lactuca serriola	prickly letttuce	Annual	I	2, 3
Liatris punctata	blazing star	Perennial	N	2

Scientific Name	Common Name	Life Form	Native/ Introduced	Id. Source
Linaria vulgaris	butter and eggs	Perennial	I	2, 3
Medicago sativa	alfalfa	Perennial	I	2, 3
Melilotus officinale	sweet clover	Annual	I	2, 3
Mentha arvenis	field mint	Perennial	N	2, 3
Nepeta cataria	catnip	Perennial	I	2, 3
Oenothera strigosa	evening primrose	Biennial	N	2, 3
Onoprodum acanthium	Scotch thistle	Biennial	I	2
Opuntia compressa	eastern prickly pear	Perennial	N	2
Persicaria lapathifolia	dock-leaved smartweed	Perennial	I	2, 3
Physalis sp.	ground cherry	An./Pe.	N	2
Plantago major	common plantain	Perennial	I	2, 3
Psoralea tenuiflora	scurf pea	Perennial	N	2
Salsoa collina	tumbleweed	Annual	I	2
Sisybrium altissimum	tumbling mustard	Annual	I	2, 3
Solidago sparsiflora	few-flowered goldenrod	Perennial	N	2
Tragapogon dubius.	salsify	Biennial	I	2
Trifolium hybridum	clover	Perennial	I	2, 3
Typha latifolia	cat-tail	Perennial	N	2, 3
Verbascum thapsus	common mullein	Biennial	I	2, 3
Yucca glauca	Spanish bayonet	Perennial	N	2, 4
GRASSES, SEDGES, & RUSHES				
Agropyron cristatum	crested wheatgrass	Perennial	I	2, 3
Agropyron repens	quack-grass	Perennial	I	2, 3
Agropyron smithii	western wheatgrass	Perennial	I	2, 3
Bouteloua gracilis	blue gramagrass	Perennial	N	2, 3
Bromus inermis	smooth brome	Perennial	N	2, 3
Bromus tectorum	cheatgrass	Annual	I	2, 3
Buchloe dactyloides	buffalo grass	Perennial	N	2, 3
Dactylus glomeratus	orchard grass	Perennial	N	2
Eleocharis macrostachya	large-spiked spike-rush	Perennial	N	2, 3
Elymus canadensis	Canada wild-rye	Perennial	N	2, 3
Equistetum arvense	horsetail	Perennial	N	2, 3
Muhlenbergia racemosa	marsh muhly	Perennial	N	2
Phalaris arundinaceae	reed canary-grass	Perennial	N	2, 3
Poa palustris	fowl bluegrass	Perennial	I	2, 3
Poa pratensis	Kentucky bluegrass	Perennial	N	3, 3
Scirpus sp.	bulrush	An./Pe.	N	4
Sporobolus cryptandrus	sand dropseed	Perennial	N	2, 3
Stipa viridula	green needle-grass	Perennial	N	2

Sources:
1 General Services Administration; EIS, 1979
2 General Services Administration; Appendix A, 1992
3 General Service Administration; Erik Olgeirson, PhD., 1992
4 Louis Berger & Associates, Inc.; A. Mavian, 1995

DFC Integrated Studies
DENVER FEDERAL CENTER

Appendix B: Wildlife Species Observed on the DFC

B.0
Wildlife Species Observed on the Denver Federal Center

Scientific Name	Common Name	Source
MAMMALS		
Canis latrans	coyote	1, 2, 3
Cynomys ludovicianus	blacktail prairie dog	1,2,3
Erethizon dorsatum	porcupine	1
Lepus californicus	black-tailed jackrabbit	1
Mephitis mephitis	striped skunk	1, 4
Microtus pennsylvanicus	meadow vole	1, 3
Mus musculus	house mouse	1, 3
Mustela frenata	long-railed weasel	3
Odocoileus hemionus	mule deer	3
Odocoileus virginianus	white-tailed deer	3
Ondatra zibethicus	muskrat	1, 3
Pemoyscus maniculatus	deer mouse	1, 4
Procyon lotor	raccoon	1, 3
Rattus norvegicus	Norway rat	1, 3
Scirus niger	fox squirrel	1, 3
Spermophilus tridecemlineatus	thirteen-lined ground squirrel	1
Sylvilagus audubonii	desert cottontail	1
Sylvilagus floridanus	eastern cottontail	2
Vulpes vulpes	red fox	1, 4
BIRDS		
Accipiter striatus	sharp-shinned hawk	3
Accipiter cooperii	Cooper's hawk	3, 4
Actitis macularia	spotted sandpiper	1, 4
Aegolius acadicus	saw-whet owl	1
Agelaius phoeniceus	red-winged blackbird	1, 2, 3, 4
Aix sponsa	wood duck	1
Amphispiza bilineata	black-throated sparrow	1
Anas acuta	pintail	1
Anas americana	American wigeon	1
Anas clypeata	northern shoveler	1, 4
Anas crecca	green-winged teal	1
Anas cyanoptera	cinnamon teal	1
Anas discors	blue-winged teal	1
Anas platyrhynchos	mallard	1, 2, 3, 4
Anas strepera	godwall	1
Anser albifrons	white-fronted goose	1
Aquila chrysaetos	golden eagle	1
Ardea herodias	great blue heron	3, 4
Aythya affinis	lesser-scaup	1
Aythya americana	redhead	1
Aythya collaris	ring-necked duck	1
Aythya marila	greater-scaup	1
Bombycilla garrulus	Bohemian waxwing	1

Scientific Name	Common Name	Source
Bonbycilla cedroum	cedar waxwing	1
Botaurus lentiginosus	American bittern	1
Branta canadensis	Canada goose	1, 3, 4
Bubo virginianus	great horned owl	1, 2, 3, 4
Bucephala albeola	bufflehead	1
Bucephala clangula	common goldeneye	1, 3
Buteo cooperii	Copper's hawk	1
Buteo jamaicensis	red-tailed hawk	1, 2, 3, 4
Buteo lagopus	rough-legged hawk	1
Buteo striatus	sharp-shined hawk	1
Buteo swainsoni	Swainson's hawk	1, 4
Butorides birescens	green heron	1
Calamospiza melanocorys	lark bunting	1
Capella gallinago	common snipe	1, 3
Carduelis pinus	pine siskin	3
Carduelis psaltria	lesser goldfinch	3
Carduelis tristis	American goldfinch	3
Carpodacus cassinii	Cassin's finch	3
Carpodacus mexicanus	house finch	1, 2, 3, 4
Cathartes aura	turkey vulture	1
Certhia americana	brown creeper	3
Ceryle alcyon	belted kingfisher	2, 3, 4
Chaetura palagica	chimney swift	1
Charadrius vociferus	killdeer	1, 2, 3, 4
Chondestes grammacus	lark sparrow	4
Chordeiles minor	common nighthawk	1
Colaptes auratus	common flicker	1, 2, 3, 4
Columba livia	rock dove	1, 2, 4
Contopus sordidulus	western wood-peewee	3
Corvus brachyrhnchos	common crow	1, 3, 4
Corvus corax	common raven	4
Cyanocitta cristata	blue jay	3
Dendrocopos pubescens	downy woodpecker	1, 4
Dendrocopos villosus	hairy woodpecker	1
Dendroica cornata	yellow-rumped warbler (myrtle & audobon races)	1, 3, 4
Dendroica magnolia	magnolia warbler	1
Dendroica pensylvenica	chestnut-sided warbler	1
Dendroica petechia	yellow warbler	1, 2
Dumetella carolinensis	gray catbird	1, 3
Egretta thula	snowy egret	3
Euphagus cyanocephalus	Brewer's blackbird	1, 3
Falco columbarius	merlin	1, 4
Falco mexicanus	prairie falcon	1
Falco sparverius	American kestrel	1, 2, 3, 4
Fluca americana	American coot	1
Geothylypis trichas	common yellowthroat	1
Grus canadensis	sandhill crane	1
Hesperiphona vespertina	evening grosbeak	1
Hirundo rustica	barn swallow	1, 2, 4

Scientific Name	Common Name	Source
Icterus galbula	Northern oriole (Bullock's race)	1, 3, 4
Icterus spurius	orchard oriole	3
Iridoprocne bicolor	tree swallow	1
Junco caniceps	grey-headed junco	1
Junco hyemalis	dark-eyed junco (slate-colored race)	1, 4
Lanius excubitor	northern shrike	1
Lanius ludovicianus	loggerhead shrike	1
Larus argentatus	herring gull	1
Larus californicus	California gull	1
Larus delawarensis	ring-billed gull	1, 4
Larus pipixcan	Franklin's gull	1
Limnodomus scolopaceus	long-billed dowitcher	1
Lobipes lobatus	northern phalarope	1
Lophodytes cucullatus	hooded merganser	4
Megaceryle alcyon	belted kingfisher	1
Melanitta deglandi	white-winged scoter	1
Melanerpes lewis	Lewis' woodpecker	3
Melanerpes erthrocephalus	red-headed woodpecker	3
Melospiza lincolinii	Lincoln's sparrow	1
Melospiza melodia	song sparrow	1, 2, 3, 4
Mergus merganser	common merganser	3, 4
Molothrus ater	brown-headed cowbird	1
Myadestes towndsendi	Townsend's solitaire	3
Nycticorax nycticorax	black-crowned night heron	1, 3, 4
Otus asio	eastern screech owl	3
Oxyura jamaicensis	ruddy duck	1
Parus atricapillus	black-capped chickadee	1, 3, 4
Parus gambeli	mountain chickadee	1
Passer domesticus	house sparrow	1, 2, 4
Passerculus sandwichensis	Savannah sparrow	1
Passerina amoena	Lazuli bunting	1, 3
Passerina cyanea	Indigo bunting	3
Petrochelidon pyrrhonota	cliff swallow	1
Phalacrocorax auritus	double-crested cormorant	3
Phalaropus fulicarius	red phalarope	1
Phasianus colchicus	ring-necked pheasant	1
Pheucticus ludovicianus	rose-breasted grosbeak	1
Pica pica	black-billed magpie	1, 2, 3, 4
Picoides pubescens	downy woodpecker	3
Pipilo erythrophthalmus	rufus-sided towhee	3
Piranga ludoviciana	western tanager	1
Podiceps auritus	horned grebe	1
Podiceps nigricollis	eared grebe	1
Podilymbus podiceps	pied-billed grebe	1
Polioptila caerulea	blue-grey gnatcatcher	3
Porzana carolina	sora	1
Quiscalus quiscula	common grackle	1, 3, 4
Regulus satrapa	golden-crowned kinglet	3
Sayornis phoebe	eastern phoebe	1

Scientific Name	Common Name	Source
Sayornis saya	Say's phoebe	1, 3
Seirus aurocapillus	ovenbird	3
Sialia mexicana	western bluebird	3
Sitta canadensis	red-breasted nuthatch	3
Sitta carolinensis	white-breasted nuthatch	3
Spinus pinus	pine siskin	1
Spinus psaltria	lesser goldfinch	1
Spinus tristis	American goldfinch	1
Spizella arborea	American tree sparrow	3, 4
Spizella passerina	chipping sparrow	1
Steganopus tricolor	Wilson's phalarope	1
Sturnella neglecta	western meadowlark	1, 4
Sturnus vulgaris	starling	1, 2, 3, 4
Tachycineta thalassina	violet-green swallow	1, 3
Tachycineta bicolor	tree swallow	2, 3
Toxostoma rufum	brown thrasher	3
Tringa flavipes	lesser yellowlegs	4
Tringa solitaria	solitary sandpiper	4
Troglodytes aedon	house wren	1, 2
Turdus migratoris	American Robin	1, 2, 3, 4
Tyrannus tyrannus	eastern kingbird	1, 3
Tyrannus verticalis	western kingbird	3, 4
Tyrannus vociferus	Cassin's kingbird	1, 3
Vermivora celata	orange-crowned warbler	1
Xanthocephalus xanthocephalus	yellow-headed blackbird	1, 3
Zenaida macroura	morning dove	1, 2, 3, 4
Zonotrichia leucophrys	white-crowned sparrow	1
Zonotrichia querula	Harris' sparrow	3
REPTILES		
Chrysemys picta	western painted turtle	1
Coluber constrictor flaventris	eastern yellow-bellied racer	3
Coluber constrictor mormon	western yellow-bellied racer	1
Phyrnosma douglassi	short-horned lizard	1
Pituophis mealnoleucus sayi	bullsnake	3
Terrapene ornata ornata	Ornata box turtle	3
Thamnophis radix hayeni	western plains garter snake	3
Thamnophis sirtalis	common garter snake	1
Tropidoclonion lineatum lineatum	northern lined snake	3
AMPHIBIANS		
Ambystoma tigrinum	tiger salamander	1, 3
Bufo cognatus	great plains toad	3
Bufo woodhousei woodhousei	Woodhouse's toad	3
Pseudacris triseriata maculata	boreal chorus frog	3
Rana catesbiana	bullfrog	3
Rana pipiens	northern leopard frog	3

Sources: 1-General Services Administration EIS, 1979
2-General Services Administration, 1992, Appendix B
3- General Services Administration, 1992
4- Finch, 1990

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Appendix C: Recreational Facilities In or Near Lakewood, CO

C.0
Recreational Facilities Located In or Near Lakewood, CO

Facility Name	Address	Principal Features
Addenbrook Park	601 S. Garrison St.	Ballfields, playground, trails, playing fields, and picnic areas.
Arts Bridge at Irongate	777 S. Wadsworth Blvd.	Art exhibits and programs.
Bear Creek Greenbelt	2800 S. Estes St.	Lake, walking trails, fishing,, picnic facilities, & open space.
Bear Creek Lake Park/Soda Lakes	13411 Morrison Road	2,687 acres: fishing, sailing, picnicking, camping, hiking, and horseback riding.
Beech Park	1682 S. Beech St.	Playing fields, playground, picnic tables.
Belmar Historic Village	797 S. Wadsworth Blvd.	127 acres: environmental & cultural heritage center.
Blue Star Memorial Park	12655 W. Colfax Ave.	Roadside park with picnicking, & nature viewing.
Bon-vue Park	290 Holland St.	Picnic tables & open play area.
Bonfils-Stanton Park	6800 W. Kentucky Ave.	Linear park, bicycle paths, playground, & open areas.
Chester-Portsmouth Park	12555 W. 27th Ave.	Playground, walking trails, & open play area.
Clements Community Center	1580 Yarrow St.	Programs and services for people age 50 & older.
Crown Hill Park	2600 Kippling St.	In an unincorporated county area offering fishing, horseback riding, & picnicking.
Daniels Park	1315 Welch St.	13 acre: ballfield, playground, & picnic area.
Daniels Community Center	1301 Union St.	Renovated grange hall available for receptions.
East Reservoir	1370 S. Kippling St.	Lake, nature viewing,, & open space.
Forsberg Park	14800 W. Alameda Ave.	40 acres: open space to be developed as a city park.
Fox Hollow Golf Course	13410 W. Morrison Rd.	400 acres public golf course with 27 holes.
Founders Park	7351 W. Florida Ave.	3 acres: basketball court, walking trails, & open play areas.
Gary McConnell Park	119982 Katherine St.	16 acres: picnic facilities & walking trails.
Glen Creighton Park	1701 Glen Ayre Dr.	1/3 acre: oldest area in city used for recreation.
Green Mountain Recreation Center	13198 W. Green Mountain Dr.	Indoor swimming pool, exercise facilities, racquetball, volleyball, basketball, & tennis courts.
Graham Park	2343 Routt St.	Walking trails, tennis courts, & nature viewing.
Hayden Green Mountain Park	1000 Rooney Rd.	2,260 acres: horseback riding, hiking, biking, wildlife viewing, & picnicking.
Hilltop Park	9766 W. 22nd Pl.	Basketball court, playground, open play area.
Hodgson Park	9401 W. Morrision Rd.	Ballfields, basketball & tennis courts, playground, & trails.
Holbrook Park	800 Garrison St.	10 acres: picnic facilities, volleyball court, & play area.
Idlewild Park	10300 W. 14th Pl.	Playground, picnic tables, horseshoe courts, & flower garden.
Iron Springs/Forsberg Park	16200 W. Alameda Pkwy.	Undeveloped open space
James J. Richey Park	1301 Carr St.	5 acres: picnic facilities & play area.
Jefferson Green Park	3333 S. Field St.	5 acres: tennis courts, trails, & picnic area.
Jewell Park	1859 S. Garrison St.	8 acres: playground, walking paths, & picnic area.
Kent Knutson Park	12100 W. Alameda Ave.	3.5 acres: facilities designed for the disabled.
Lakewood Link Recreation Center	1295 S. Reed St.	Exercise facilities, pool tables, gymnastics, martial arts, art & leisure classes, other programs
Lakewood Estates Park	5954 Iliff Dr.	Playground, tennis courts, & open play area.

Facility Name	Address	Principal Features
Lakewood Park	150 S. Kipling St.	21 acres: lighted ball fields, play areas, & picnic facilities.
Lakewood Sister City Park	3250 S. Carr St.	Undeveloped open space adjacent to 300 acre greenbelt.
Lochmoor Park	7001 W. Stanford Ave.	Open play area.
Main Reservoir	1305 S. Kipling St.	Walking trails, lake, nature viewing, & open space.
Meadowlark Park	8601 W. Second Ave.	2 acres: playground & picnic facilities.
Morse Park	8180 W. 20th Ave.	19 acres: swimming pool, play & picnic facilities.
Montairr Park	5625 W. 13th Ave.	8 acres: trails, basketball & tennis courts, & playing fields.
North Lakewood Community Center	8715 W. 16th Ave.	racquetball court, exercise equipment, meeting rooms, walking trails, playground, picnic facilities.
O'Kane Park	7101 W. First Ave.	28 acres: trails, basketball court, play areas, & picnic facilities.
Rampart Park	9150 W. Cornell Pl.	Basketball court, playground, & open play area.
Ravines Open Space	12501 W. Jewell Ave.	Walking trails
Sanctuary Park	1401 S. Garrison St.	Walking trails, nature viewing,, & open spaces.
Smith Reservoir	10405 W. Jewell Ave.	Walking trails, lake, picnic tables, & flower viewing.
Sunset Park	10500 W. 12th Ave.	Undeveloped open space.
Surfside Pool	5330 W. 9th Ave.	Outdoor swimming pool.
Sutherland Shire Park	10600 W. Kentucky Dr.	Ballfields, playground, walking trails, & open play area.
Taft Park	2951 Simms Dr.	Playground, & open play area.
The Stone House	W. Yale Ave. & S. Estes St.	Historic building available for meetings or receptions.
Thunder Valley Park	701 Rooney Rd.	85 acres: off-road track for motorcycles, & ATVs.
Triangle Park	1835 Glen Ayr Dr.	Flower viewing, open play area.
Union Ridge Park	500 Zang St.	Undeveloped open space.
Union Square Park	200 Van Gordon St.	14 acres: trails, playground, & picnic facilities.
Ute Trail/Lower Ravines	13600 W. Jewell Ave.	Playground, entrance to lower ravines
Welchester Tree Grant Park	13101 W. Eighth Ave.	20 acres: rustic wooded area with walking trails.
Westborough Park	9600 W. Dartmouth Pl..	Playground, tennis courts, trails, & picnic tables.
Westgate Park	8480 W. Vassar Ave.	6 acres: with trails & play areas
Whitlock Recreation Center	8715 W. 16th Ave.	Exercise facilities, racquetball, volleyball, & basketball courts.
Wilbur A. Rogers Center	12100 W. Alameda Pkwy.	Specialized services and facilities for special needs populations.
Wright Park	500 Wright St.	Walking trails & volleyball court.
YMCA Park	1960 Quail St.	Playing fields, tennis & volleyball courts, trails, & picnic tables.

Sources: City of Lakewood, 1996
City of Lakewood, Dept. of Community Resources
Lakewood 25th Birthday Commission, 1994

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Appendix D: Pollution Prevention at the Denver Federal Center

D.0 Pollution Prevention at the Denver Federal Center

In recent years it has become increasingly evident that the wisest course of action is to implement programs that will prevent or reduce environmental contamination at its source. This prevents any environmental damage potentially caused by contamination and reduces the costs associated with required treatment and disposal. In light of this increased awareness of the need for pollution prevention (P2), the Federal Government has established a number of public policies with respect to P2. This Appendix summarized the significant Federal P2 policies, sets forth examples of how P2 has already been accomplished at the DFC, and identifies the goals and objectives in the DFC Master Site Plan that support P2.

As defined by the Presidents Council on Environmental Quality pollution prevention includes, and is not limited to:

> "...reducing or eliminating both point and non-point source pollution; modifying manufacturing, maintenance, or other industrial practices; modifying product designs; recycling (especially in-process, closed loop recycling); preventing the disposal and transfer of pollution from one media to another; and increasing energy efficiency and conservation. Pollution prevention can be implemented at any stage - input, use or generation, and treatment - and may involve any technique - process modification, waste stream segregation, inventory control, good housekeeping or best management practices, employee training, recycling, and substitution. Indeed, any reasonable mechanism which successfully avoids, prevents, or reduces pollutant discharges or emissions other than the traditional method of treating pollution at the discharge end of a pipe or a stack should, for purposes of this guidance, be considered pollution prevention."

Pursuant to the policy goals and procedural requirements of NEPA and CEQ regulations, Federal agencies should take every opportunity to include pollution prevention considerations into the early planning and decision making processes for their actions, and where appropriate, should include these considerations in NEPA documents.

The **Pollution Prevention Act of 1990** (42 U.S.C. 13101-13109) established a national policy that: whenever feasible, pollution should be prevented or reduced at the source; that pollution that cannot be prevented should be recycled in an environmentally safe manner; that pollution that cannot be prevented or recycled should be treated in an environmentally safe manner; and that disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner.

Among the goals of the **Energy and Policy Conservation Act of 1992** (42 U.S.C. 6201) are conserving energy supplies through energy conservation programs, and, where necessary, the regulations of certain energy uses: providing for improved energy efficiency of motor vehicles, major appliances, and certain other consumer products; and conserving water by improving the water efficiency of certain plumbing products and appliances.

To increase pollution prevention implementation levels in Federal Agencies, the President has issued a series of Executive Orders. These include the following:

- **Executive Order #12844** (April 21, 1993): *Federal Use of Alternative Fueled Vehicles*. Requires the Federal Government to acquire, subject to the availability of funds and considering life cycle costs, alternative fueled vehicles in numbers that exceed by 50 percent the requirements for 1993 through 1995 set forth in the Energy Policy Act of 1992. (Exceptions: The Secretary of Defense, the Secretary of the Treasury, and the Attorney General, ... shall determine the extent to which the requirements of this order apply to the national security and protective and law enforcement activities of their respective agencies.)
- **Executive Order #12856** (August 4, 1993): *Federal Compliance with Right-To-Know Laws and Pollution Prevention Requirements*. Requires the head of each Federal Agency to develop a written pollution prevention strategy to achieve the Toxic Chemical Reduction goals, Acquisition and Procurement goals, Toxic Release Inventory/Pollution Prevention Act Reporting goals, and Emergency Planning and Community Right-to-Know Reporting Responsibilities, as described in this Order.
- **Executive Order #12873** (October 20, 1993): *Federal Acquisition, Recycling, and Waste Prevention*. This Order creates a Federal Environmental Executive and establishes high-level Environmental Executive positions within each agency to be responsible for expediting the implementation of this Order and statues that pertain to this Order.
- **Executive Order #12902** (March 8, 1994): *Energy Efficiency and Water Conservation at Federal Facilities*. This Order establishes Energy Consumption Reduction goals for Federal agencies; requires Energy and Water Surveys and Audits of Federal Facilities; implementation of Energy Efficiency and Water Conservation Projects; increased goals for Solar and other Renewable Energy sources; and minimization of Petroleum-based Fuel Use in Federal Buildings and Facilities.

Numerous P2 strategies have been adopted or planned for the DFC. Many of these initiatives are currently implemented on a site-wide basis at the DFC. These include the following measures:

Energy Conservation Measures

- Lighting- replacement of existing fixtures with magnetic ballasts and T-12 lamps with efficient electronic ballasts and T-8 lamps. If the number of identical lighting fixtures permit, a mirrored reflector will be added, and one or more lamps removed. This includes the proper disposal of used fluorescent tubes and existing PCB ballasts and replacement with non-PCB ballasts. (Adopted)
- Installation of separate utility meters in new buildings. (Adopted)
- Encouraging agencies to purchase alternative fuels vehicle fleets. Nearly 15 percent of the vehicles in the fleet of 4,000 units run on alternative fuels. On behalf of the user agencies, GSA expects alternative fuels vehicles to comprise 50 percent of the 750 new vehicles ordered in 1998. (Adopted)
- Installation of lighting controls to replace existing lighting switches. Occupancy sensors for low use areas and timed controls for high use areas. (Planned)
- Replacement of existing HVAC air handler and pump motors with premium efficiency motors. (Planned)
- Installation of variable speed drives on air handling motors, pump motors, and installation of two speed motors on cooling towers. (Planned)
- Installation of automated building monitoring and control systems. (Planned)

- Installation of self diagnostic steam traps to allow building maintenance personnel to quickly determine if the steam trap is leaking. (Planned)
- Closure of the condensate system loops for steam boilers to eliminate blow off steam thus saving energy, water, chemicals, and electricity. (Planned)
- Installation of flat plate heat exchangers so that on milder weather days the buildings can be cooled by the cooling tower alone, thus allowing the chiller to be turned off. (Planned)
- Replacement of old boilers and chillers with more efficient new boilers and chillers. (Planned)

Water Conservation Measures

- Retrofitting of faucets with aerators to restrict water flow from 4 gallons per minute to 1.5 gallons per minute. (Adopted)
- Installation of separate water meters in new buildings. (Adopted)
- Replacement of old toilets and urinals with new low flush variety. (Planned)
- Recirculation of water in cooling systems. (Planned)
- Closure of condensate systems loops. (Planned)

Landscaping

- Use of xeriscaping plantings and design in new landscaping projects to utilize native plants that require less water and fertilizer. (Adopted)
- Watering of landscaping after 6:00 p.m. to minimize evaporation. (Adopted)
- Control of sprinkler systems by using weather gauge instead of timer so sprinkle systems are not turned on during days when it is raining. (Planned)
- Adherence to the existing grounds maintenance contract limitations on the use of chemicals on lawns and trees. (Planned)
- Adherence to the existing grounds maintenance contract specifications on water conservation measures in keeping with recommendations from a previous Denver Water Department assessment, such as watering to avoid the peak heat of the day, automated sprinkler systems, reseeding with fescue-type grasses, and letting grass grow taller before mowing to reduce water loss. (Planned)

Recycling

- Existing paper recycling programs in many DFC buildings and one on-going cardboard recycling program in Building 810 at this time. (Implemented individually by each agency)
- Recommending the use by vehicles servicing contractors of re-refined motor oils in the GSA motor vehicle fleet. (Adopted)

In addition, numerous P2 strategies have been initiated within specific buildings at the DFC. A multimedia P2 assessment, funded by EPA and conducted by the Colorado State University Waste Minimization Assessment Center, was performed on Building 20. It also addressed then-occurring operations in the cafeteria in Building 41, which has since been closed. A report, dated September 1996, included an evaluation of existing P2 practices, and recommendations for additional P2/energy conservation measures. Most of these recommendations have been, or are planned to be as funding permits, implemented in Building 20.

The majority of the assessment's recommendations can be, and in many cases have been applied to the other major facilities on the DFC. GSA is currently working with EPA to conduct tenant awareness seminars in Buildings 41 and 53 to identify and promote waste reduction, and water and energy savings opportunities. Similar programs will be planned for other major on-site facilities pending available funding.

Table D-1 below outlines pollution prevention measures that are occurring or are scheduled to occur at specific buildings, and/or through specific tenant agencies, on the DFC.

Table D-1: Pollution Prevention Measures That Are or Plan to be Implemented at the DFC at Specific Buildings and/or by Specific Tenant Agencies

Location	Program
Bldg. 56 & 67	Recycling program through Bureau of Reclamation
Bldg. 56 & 67	A performance contracting program with Public Services Co. for energy savings projects (estimate of 15 projects).
Bldg. 56, 67, & 810	Lighting retrofit and/or lighting control projects in the last few years. An active energy conservation program for all three buildings consisting of operational and consumption reviews, maximization of the EMS systems and regular quarterly meetings with tenants to discus energy issues.
Bldg. 810	Recycling for two grades of paper, film, aluminum cans, glass, cardboard, and plastic waste through USGS. CASU is also involved in this program
Bldg. 67	Scheduled xeriscape project. Several restrooms retrofitted with auto flush valves, auto sink faucets, and low water (1.6 gal.) toilets and urinals. Scheduled to receive a RTD kiosk to expand use of the RTD metro system.
Bldg. 56	An ozone system for the model water reservoir operated by BOR. This saves water by minimizing the need to clean the reservoir or replace the 500,000 gallons of water.
(BOR & USGS)	Regular review of laboratory chemical usage to minimize the waste stream and utilize the most environmentally safe chemicals for the job.
(BOR)	Reductions of chemical storage by approximately 30% over the past couple of years.
Bldg. 67	Long term schedule for new thermal pane windows.
Bldg. 810	Long term schedule for an EMS system for the warehouse, an energy audit, and new efficient boilers.
Bldgs. 15, 20, 21, 21B, and 25 (USGS)	Office paper recycling through Tri-R recycle paper company. Chemical usage on daily basis, inside the individual labs. Storage of some chemicals in labs. Hazardous chemicals are stored in proper cabinets on southeast side of Bldg. 20.
Bldg. 20 (OSM)	Office paper recycling through Tri-R recycle paper company.
Bldg. 20 (FDA)	Office paper recycling through Tri-R recycle paper company. Chemicals in labs are stored, and hazardous chemicals are stored in proper secured lockers and storage cabinets located within the lab section of FDA space.
Bldg. 810	Location of a metal recycling dumpster.
Maintenance vehicles	Use of alternative fuel vehicles.
Bldgs. 41 & 53	GSA is working with the EPA on programs to teach tenant awareness on energy and water conservation in Buildings. 41 and 53.
Bldg. 20 & CASU	Office paper recycling program.
Bldg. 20	Tenants have established a printer and toner cartridge recycling program.
Bldg. 20	The cooling tower treatment chemicals appear to be free of hexavalent chromium.
Bldg. 20	About 95 percent of the ammunition used at the Firing Range is jacketed ammunition thereby reducing lead emissions.

Location	Program
Bldg. 20	Electronic ballasts and energy-efficient long-life 32 W fluorescent lamps have been installed throughout most of Building 20.
Bldg. 20	Variable frequency motor drives have been installed on the make-up air unit fans that serve laboratories.
Bldg. 20	High quality, super high efficiency motors have been installed onfans and pumps throughout the facility.
Bldg. 20	Indirect evaporative cooling is used to provide chilled water for space cooling when the outdoor air conditions allow. The flat plate heat exchanger runs most of the time at night during the summer, diminishing the use of chillers.
Bldg. 20	Many of the faucets in the restrooms meet the Federal guidelines of 2.5 gallons per minute.
Bldg. 20	Multizone air handlers have been installed throughout the building. This has allowed for the ventilation to vacant building areas.
Bldg. 20	Steam and hot water lines are well insulated.

Master Site Plan Pollution Prevention Goals and Objectives

A set of comprehensive goals and objectives were prepared in response to the site's opportunities and constraints, as identified analyzed during development of the Master Site Plan. The goals and objectives were prepared to address a range of topics, including land use, transportation, design, infrastructure, environmental quality, community context, and tenant services.

The following pollution prevention goals and objectives are included as part of the proposed Master Site Plan:

Goal 4.2.2: Minimize the total number of single occupancy-vehicle trips generated by activities at the DFC.
Objectives:

- Incorporate transportation demand strategies, such as ride-sharing, transit, pedestrian and bicycle access, into site development alternatives and Master Site Plan policy statements.

Goal 4.2.3: Coordinate transportation planning activities with the RTD
Objectives

- Allow for possible future expansion of the Cold Springs Park-n-Ride.
- Allow for possible accommodation of a light rail system, or major regional depot facility.

Goal 4.2.4: Provide safe and efficient linkages for a variety of modes of transportation, including transit and pedestrian and bicycle routes.
Objectives:

- Integrate and provide pedestrian and bicycle routes throughout the site.
- Integrate and align DFC pedestrian and bicycle routes with those located off-site.
- Investigate the feasibility of implementing a shuttle bus service within the DFC.

Goal 4.4.1: Maximize efficiency of current and future infrastructure systems.
Objectives:

- Develop a program for on-going analysis of service capacity as new development is proposed.
- Coordinated with utility service providers when development is proposed.

Goal 4.4.3: Minimize stormwater impacts on the site.
Objectives:

- Utilize appropriate stormwater management techniques.
- Identify suitable locations for additional stormwater detention basins as needed.
- Design on-site flood control and drainage areas to accommodate current and proposed development on the DFC.
- Coordinate with the City of Lakewood on stormwater runoff control measures.

Goal 4.5.1: Protect important natural processes and features that exist on the site.
Objectives:

- Maintain wetlands and marshland on the site to serve as natural filters for runoff, preserve environmental diversity, promote habitat protection, and provide opportunities for wildlife viewing.
- Improve the function of the McIntyre Gulch with consideration given to natural habitat needs, stormwater conveyance, erosion management, interpretation, and recreation opportunities.
- Maintain important wildlife habitat areas on the site, and retain their natural state to the maximum extent possible.

Goal 4.5.2: Improve overall site environmental quality.
Objectives:

- Restore disturbed or contaminated sites as necessary to sequence building projects.
- Protect site users and the neighboring communities from noise sources that exceed established standards.
- Implement TDM measures to improve air quality.
- Ensure that possible emissions do not exceed established standards.
- Protect air quality by incorporating best available control technology in all future development and rehabilitation.

Goal 4.5.3: Promote environmental conservation through site improvement programs.
Objectives:

- Develop an open space system that will provide a value-enhancing amenity for the site as well as meet some regional open space and recreational needs.
- Incorporate water conservation measures by limiting the amount of irrigated landscape areas and utilizing xeriscaping planting techniques.
- Identify possible locations for materials management and recycling to reduce solid waste generation.
- Consider revegetating McIntyre Gulch with native riparian vegetation as appropriate.

Master Site Plan Implementation Plan

The proposed Master Site Plan incorporates an Implementation Plan which provides a strategy for implementing the recommendations identified by the Plan. The primary objective of the Implementation Plan is to establish a process that coordinates development activities at the DFC. This includes recommendations for a development review process, with submittal requirements that will help ensure the coordination of development-related decisions and activities at the DFC. The Implementation Plan also includes a set of guidelines and standards to be utilized in the design and review of projects on the DFC to ensure project compliance with the goals and objectives contained in the Plan. These guidelines and standards provide a detailed set of criteria for building and site

development, transportation and circulation improvements, open space areas, signage and lighting, and accessory uses.

The Implementation Plan is organized into 11 sections, described as follows:

- *Development Review* provides a classification system for the various types of uses at the DFC.
- *Development Guidelines and Standards* identifies a range of development criteria and practices for development districts, buildings, and site improvements.
- *Transportation and Circulation Guidelines and Standards* address gateways, roads, transit, parking, pedestrian, and bicycle facilities.
- *Open Space Standards and Guidelines* provide recommendations for plant materials, and treatment of open space areas.
- *Accessory Use Guidelines* provide recommendations for accessory uses, buildings, and structures.
- *Schedule for Site Improvement Projects* describes projects identified in the Master Site Plan, including implementation options.
- *Sign Program* includes sign criteria and implementation recommendations.
- *Lighting Program* includes lighting criteria and implementation recommendations.
- *Site-Wide Studies* includes recommendations for additional studies to be undertaken as part of implementing the Master Site Plan
- *Building Improvements* includes a summary of improvements for buildings on the site.
- *Financial Components* discusses federal budgetary programs and other options for short and long-term funding of projects.

The portions of the Implementation Plan that relate to P2/conservation measures are outlined in the following paragraphs. For more information, refer to the Master Site Plan.

Project Review Process. The purpose of the project review process is to ensure that all proposed future development and land use activities of the DFC are implemented under the recommendations, goals and objectives, and standards of the Master Plan. The following goals of the Master Plan are related to P2 initiatives:

- Minimize the total number of single occupancy vehicle trips generated by activities at the DFC.
- Coordinate transportation planning activities with the RTD.
- Provide safe and efficient linkages for a variety of modes of transportation, including transit and pedestrian bicycle routes (including the provision of infrastructure such as bicycle parking and changing rooms/shower facilities).
- Maximize efficiency of current and future infrastructure system.
- Minimize stormwater impacts on the site.
- Protect important natural processes and features that exist on the site.
- Improve overall site environmental quality.
- Promote environmental conservation through on-site improvement programs.

Submittal Requirements. As part of the review process, all proposed development at the DFC must include utility and drainage reports, proposed pedestrian circulation, erosion control plans, and a landscape plan.

Development Guidelines and Standards. The proposed development guidelines and standards are critical to the achievement of site-related goals, land use designations, and the circulation framework established by the Master Site Plan. Each new development, redevelopment activity, or site

improvement project, will be evaluated for compliance with the development guidelines and standards. Relevant guidelines and standards include:

- Newly constructed/renovated buildings should be designed or sited with regard to climatic conditions, with attention to prevailing winds, solar orientation and micro climatic conditions.
- Roof overhangs are to be utilized that shield windows on south facing walls from the higher summer sun but admit the lower winter sun; also can use sun shades.
- Use medium color surfaces on exterior walls for reflection and absorption of solar radiation.
- Protect buildings exposed to winter winds with berms, walls, fences, etc.
- General building orientation, shape, massing, fenestration, color, and planting can all be used to modify the effects of climate on the site and help conserve energy through reduction on a building's mechanical and electrical systems.
- Use native planting, grouped into "zones" based on irrigation needs, etc.
- Prescribes and enhances transit systems to promote ridership and encourage alternatives for transportation throughout the DFC; link future development with transit service; provide safe and direct pedestrian access; allow and promote sharing of parking to promote other means of access, such as walkways and bikeways between activities (including the provision of infrastructure such as bicycle parking and changing rooms/shower facilities).
- Promote a contiguous pedestrian network throughout the site that is efficient, safe, and enjoyable.
- Promote a managed open space program with benefits of energy conservation (by providing shade during summer months, noise reduction by dense foliage buffers); wind control; point source pollution control; glare and reflection reduction; and erosion and dust control.
- Promote environmentally preferential purchasing by agencies at the DFC, including the use of recycled and recyclable materials and products with minimal packaging.

Update and Review of Master Plan. Future amendment proposals are to be based on established criteria including: conformance with Master Plan Goals and Objectives; compatibility with existing and planned surrounding land uses; avoidance of detrimental impacts to existing or planned open space areas, environment, infrastructure, circulation and traffic systems; and providing a determination for the need to supplement the DFC Master Plan EIS.

DFC Integrated Studies
DENVER FEDERAL CENTER

Appendix E: Scoping Meeting Transcript, December 7, 1995

COPY

GENERAL SERVICES ADMINISTRATION,
BALLOFFET & ASSOCIATES, INC.

REPORTER'S TRANSCRIPT OF PUBLIC HEARING

December 7, 1995

IN RE:

DENVER FEDERAL CENTER MASTER PLAN

Pursuant to Notice to all parties in interest, the above-entitled matter came on for public hearing before General Services Administration and Balloffet & Associates, Inc., on Thursday, December 7, 1995, commencing at 7:00 p.m., at 445 South Allison Parkway, Lakewood, Colorado, before Tracy L. Newton, Registered Professional Reporter within and for the State of Colorado.

APPEARANCES:

GENERAL SERVICES ADMINISTRATION:

Lisa Morpurgo, Portfolio Management Staff
Jim Cahill, Director of Portfolio Management
Greg Potter and Jeff Cromerford

P R O C E E D I N G S

MR. CAHILL: Good evening, ladies and gentlemen. I'd like to welcome you to the meeting for the environmental impact statement scoping process, and it's for the master plan at the Denver Federal Center. My name is James Cahill. I'm director of the Portfolio Management Office of GSA at the Federal Center.

This meeting is a very important part of GSA's effort to develop a master plan for future use of the Federal Center. We value the participation of the public. The public's input will help us to identify the environmental impact statement issues that we need to consider in the environmental impact statement. The environmental impact statement process is governed by the National Environmental Policy Act and the regulations of the Council of Environmental Quality. They require that Federal agencies do EIS on certain actions that they undertake. For GSA, in this case, it's a master plan of the future use of the center.

To tell you a little bit more about the EIS process and to moderate the meeting, I'd like to introduce Lisa Morpurgo and she will carry on.

MS. MORPURGO: As Jim mentioned, the purpose of tonight's meeting is to get your input to

the EIS process, which will assist GSA in determining the scope for our environmental analysis. As Jim mentioned, under our regulations, whenever we do a master plan, we have to complete an environmental impact statement. The master plan is basically a land use document or plan that will help guide future development and land use related decisions at the Denver Federal Center in the future.

GSA has hired the planning firm of Balloffet & Associates along with their subcontractor, Louis Berger and Associates, Inc., to assist us in our efforts, and I just wanted to introduce a couple of people that are here with us tonight. Jeff Cromerford (phonetic), heading up the EIS, and Greg Potter who is working on the master plan.

I'd like to just take a few minutes, first, to run through the handout that we've made available -- there's copies in the back for anyone who didn't get it -- and just explain a little bit about what's in here, and then I'm going to talk about how tonight's meeting will be conducted.

In the handout, there's an agenda in the front, and a map of the Federal Center as well. On Page 1, it gets into some discussion, and I just wanted to run through this. First, this handout talks a

little bit about the EIS process itself. It mentions some of the laws and regulations that Jim had mentioned.

The next section talks about the scoping process; what scoping is, which is what we're beginning tonight, and how it will continue throughout the appropriation of the environmental impact statement. It also talks a little bit about the actual preparation of the EIS. There's a draft environmental impact statement that's prepared, a final environmental impact statement, and a record of decision.

Also, in this section, 1.1.3, there is a schedule, and it talks about the master plan and the milestones that we anticipate completing under the master plan. It then talks about the environmental impact statement and those milestones, and then it talks a little bit about some of the related studies that we're doing, such as the historic preservation plan and the transportation management plan, as well as some initial site investigation work.

The next section, 1.2, talks about the proposed action of the master plan. This section basically focuses on the alternatives that have been currently identified for analysis. These alternatives, right now, consist of a no-action alternative, which is

kind of a status quo continuation of current operations. Another alternative looks at moderate growth at the Federal Center, and the third alternative looks at decreasing federal activity at the Federal Center.

Section 1.3 discusses background and project issues, and what this section does is it gives a brief background of some of the information about the Federal Center itself. And then it talks a little bit about some of the project related issues that we anticipate through this process. And the last section has -- there is a proposed EIS outline, and this basically is indicative of the scope that we anticipate doing our analysis on in the EIS.

Okay. With that, I just wanted to explain a little bit about how tonight's scoping meeting will be conducted. As previously stated, we're here tonight to essentially get your input. Therefore, we're here to listen to you.

Based on the order which you signed in on the register up front, we wanted to open the floor for comments. Each individual has 10 minutes to speak. And for those who don't wish to speak, what we instead would like is for you to submit comments. There's also a written comment form back there, that you can get,

and we will be accepting written comments until January 8th, as stated on the comment sheet. They can be mailed to me, and my address is on the comment sheet as well as in the handout.

For those of you who may want to speak tonight, we also encourage you to take a comment form as well, just in case you think of something after the meeting that you think is important for us to know for this process. So with that, I'd just like to open the floor to comments, and it looks like we only have one person that wants to speak tonight, and that's Dorothy Wisecarver.

AUDIENCE MEMBER: Correct.

MS. MORPURGO: You can stand up or sit down, whatever you prefer.

AUDIENCE MEMBER: My name is Dorothy Wisecarver, and I seem to be one of the only public here tonight, practically.

MS. MORPURGO: There's a few, but not many, yes.

AUDIENCE MEMBER: But -- and so I would like to say that I -- and I did know about this because a city councilman happened to give me the letter that was written to Mayor Mortin, which I'm sure he got in this packet, and he shared that with me, so that's how

I knew about it. Otherwise, I did not know about this meeting. I also have many neighbors and friends that I know are interested in this, but I know did not know about the meeting, and I didn't have time to notify them because I just got the notice. So there should be some way that we could better notify people.

MS. MORPURGO: Right.

AUDIENCE MEMBER: Because -- and the reason that I'm here tonight is that I live east of the Federal Center on Meadowlark Drive, east of Garrison Street along McEntire Gulch, and I've lived there 29 years along the gulch. I realized that the scope of your -- I was on the city council for three terms in the city of Lakewood, and many of my duties on the council was connected with the drainage problems in the city of Lakewood. So I'm very familiar with all the drainage areas and the problems that McEntire Gulch has had, and the other gulches, you know, that Lakewood -- you know, the problems they've had with the drainage in that area.

I realize that the scope of your study will be mostly on-site of the Federal Center, but I would like to emphasize that it does directly affect the people, because it's a large area in -- the Federal Center is a very large area, but it's surrounded by

neighborhoods, and -- that have been developed many years ago.

Now, the gulch area and the impervious area, created by the development west of the Federal Center and on the Federal Center, creates a direct problem for, of course, everyone further downstream. And we're very concerned about what happens there, you know, so that the detention ponds would be retained, and also that there is due consideration given to the -- how that drainage is handled and sent east.

MS. MORPURGO: Right.

AUDIENCE MEMBER: Also, having lived along that gulch all these years -- my husband was a Federal employee there, and that's why we live so close -- but over the years, I've seen that gulch just about every color. Now, I was discussing it with a long-time resident the other night, and sometimes we have green, and sometimes red, and sometimes -- and in those years, before and after the city was incorporated, we were told that some of these things were being put into the gulch at the Federal Center level. This concerns me. It still concerns me.

MS. MORPURGO: Uh-huh.

AUDIENCE MEMBER: Now, of course, we have the problem of the building of the stadium, the

solvents that have leaked from the Federal Center onto the Bonview area, and I would like to see the scope of this redevelopment -- whatever, you know, you plan for the site development, to include those issues of toxins and environmental concerns, and they are great.

And I'm -- in fact, I'm not blaming anything or anyone, but I am just recovering from an operation for a tumor that was in my cheek, and so I have speech problems, because I have paralysis, but what is very strange is that I have three -- I have two neighbors on either side of me with the same operation, with the same problem, and also right around the corner. We all live on the creek, and we're all long-time residents. I'm not saying it did or didn't do it. I'm just saying that we're concerned that anything in that creek or anything that causes a problem for us, because we're directly concerned.

So I would like to see the scope of this study include those things, and I will make a written comment which will go into more detail.

MS. MORPURGO: Great. Thank you. We appreciate your comment. Does anyone else want to speak that may not have signed up?

AUDIENCE MEMBER: I'm Jay Hutchinson, and I'm the city engineer, and I wonder, Lisa, if you or

one of your consultants could speak a little bit about the extent of the evaluation of impacts off-site which are related to either the existing facilities on the Federal Center or the scenarios that might be generated to the master plan? Particularly, in the areas of drainage, transportation -- well, let me start with those two.

MS. MORPURGO: Well, just briefly, all the studies that we're doing are going to look at off-site issues as well as on-site issues. We'll be looking at drainage and impacts that could happen off-site, and one of the biggest areas we will be looking at for off-site impact is in the area of transportation. We're doing a separate study, a transportation management plan.

Right now, we're doing a lot of traffic councils to see where people are coming from, trip origins, destinations, things of that nature, so we will be looking to a more city level, outside of the fence, and looking at impacts as well as inside events, because we realize we do have a lot of impact on the surrounding community, and we want to make sure that we address them all and look at the scope that we should be looking at.

The alternatives, also, that we will be

looking at is the EIS in terms of different growths in the areas. We'll also look at impacts outside of the Federal Center as well, and we've got a lot of studies that we've completed so far, parts of studies under the master plan, like the transportation management plan, and we've got them up here. If you want to take a look at them and see what we have done so far, we encourage you to do that.

AUDIENCE MEMBER: Do I understand that you've got, at least at this point, kind of an overall master planning committee that involves folks outside of your agency?

MS. MORPURGO: Yes, we do. We have what's called a planning advisory committee, and there are representatives from federal agencies on the Federal Center, representatives from the city of Lakewood, Jefferson County, community representatives from the area, and there's also representatives from RTD and from the Colorado Department of Public Health and Environment. That committee meets, right now, on a monthly basis, and has been getting a lot of information about the stuff that we've developed to date, and will be involved in setting goals and objectives and also in developing the master plan itself.

AUDIENCE MEMBER: As the impacts off-site are analyzed, is it your expectation that the EIS will look at solutions to those impacts that are consistent with the types of solutions that Lakewood might normally require where this then would incorporate Lakewood?

MS. MORPURGO: Well, I mean the EIS has to look at impacts and potential mitigation measures for those impacts. So, you know, impacts will be to Lakewood, so I'm assuming that we'll be doing that in consultation with what Lakewood would do and recommend, and what their requirements are.

AUDIENCE MEMBER: Thank you.

MS. MORPURGO: Sure.

AUDIENCE MEMBER: My name is Brian Neilson (phonetic), and I'm the city environmental manager. I'm just wondering if the scope of your project would include the infrastructure at the Federal Center, particularly the storm sewers and sanitary sewers that are underneath the building structure that currently exist there? Are you going to be looking at that portion of that?

MS. MORPURGO: Yeah, we are. Greg can probably address this a little bit better, but right now, what we're trying to do is make sure we get a

handle on all the utilities out there and how they work, and get an assessment of the condition that they're in right now, but that will be something we're looking at.

Anything else to add to that, Greg?

MR. POTTER: Just the fact that there are numerous sources of information, historical information on the existing utilities, which we are in the process of collecting and producing a master map for each utility system. Those are nearly complete and ready for their final verification, you know, for those people at the Denver Federal Center who are most familiar with location and existence of those lines.

So we've gone through the process of determining which lines have been abandoned versus which lines are in existence, and locating, as precisely as possible, the location of the abandoned steam lines as well. So that has been -- a lot of times, an effort has been put into that specific item.

AUDIENCE MEMBER: Would that information, then, be shared with the fire department in case we do have a situation out there as to where a substance may be flowing or so that we do have a master plan, not only in the future, but in the near future?

MS. MORPURGO: We've got representatives on

the advisory committee, the one that I was just talking about, that are in the planning department, and we'll be sharing a lot of these documents with them. In fact, they've seen some already, so I can certainly let you know who those people are, and, you know, have them provide the information to you or make sure that it gets back to who it needs to get back to.

MR. POTTER: One other quick comment, too, is that that information is all being produced on electronic format, so that's readily available for you as well.

AUDIENCE MEMBER: The committee that you mentioned, the community leaders and the city of Lakewood, is that list available of the committee members?

MS. MORPURGO: Sure.

AUDIENCE MEMBER: I would like a copy of that.

MS. MORPURGO: Sure. Okay. Greg has one here, so -- are there any other comments?

AUDIENCE MEMBER: I have another one. It's actually a question. How does something like the existing release from the old Federal Highway Administration underground storage tanks fit into this EIS?

MS. MORPURGO: Well, the EIS -- the purpose of the EIS is to look at the impacts of what we're proposing to do -- the proposed action in implementing the master plan. So it's somewhat separate in that respect, in terms of the scope of the EIS, but we realize that it is a concern out there. Part of what the EIS does is it looks at the existing conditions of the Federal Center. Highways -- as some of you may know, federal highways are doing some studies right now and are undertaking some work to identify some contaminants that have gone off the center.

What GSA has done on a site-wide level is we've initiated some site investigation work, and we've just done parts of it. It's a big center, and we need to look at it over time, but definitely the results will be, with what we have to date, incorporated into the EIS. We realize that is a concern, and it is something we need to address as much as possible, but the focus will be looking at the impacts of doing future development on the center.

AUDIENCE MEMBER: When -- in -- for instance, in redeveloping the center and disturbing, say, the contaminated land, would that be addressed in this?

MS. MORPURGO: Yes, that's the primary --

we're going to be looking to build things or redevelop some areas. Obviously, we need to know what's lying under the ground, and that's how it will be addressed, in the EIS.

AUDIENCE MEMBER: So there will actually be some physical investigation --

MS. MORPURGO: Yes.

AUDIENCE MEMBER: -- as to what the conditions are?

MS. MORPURGO: Right. We've already undertaken some physical investigation, and we've been working with the state, the Department of Public Health and Environment, and actually, on the committee as well, so we have been working closely with them. And also with the highways as well, to make sure that we're all providing each other information that we have in trying to coordinate our efforts and not duplicate our efforts.

Any other comments or questions?

(Pause.)

MS. MORPURGO: Okay. Well, like I said before, there are written comment forms in the back, and I encourage people to take them along. If you know of anyone that may be interested or may have something to say about what we're doing, take as many copies as

you want. If you want more, we can certainly provide them.

I would also like to mention that in October, we did have a meeting for the master plan. It was a public meeting, and that was basically just to introduce the master plan and some of the studies we were doing. Tonight, we had an open forum prior to this meeting, and that was from 5:00 to 7:00, and it was to talk about the master plan. Then at 7:00, we started the EIS scoping meeting itself. We will be having many more meetings throughout the process, both specifically for the master plan and for the EIS.

Probably, like we did tonight, we'll try to coordinate them so that we can get people to come -- they'll just have to come to one meeting instead of two, so . . .

AUDIENCE MEMBER: How do you announce the meetings?

MS. MORPURGO: What we've done so far, in terms of announcing the meetings, is we have put notification in the newspaper -- the newspapers in the area for the EIS scoping meetings, and prior have put notices in the Federal Register as well, not that that many people read the Federal Register, but what we also have done is sent out newsletters, which are also in

the back, and we sent this one out, too, I guess, and it is dated November the 20th to about 20 or so, Greg, homeowners in the area?

MR. POTTER: Yeah, there's actually about 25 homeowners associations in the immediate area.

MS. MORPURGO: And we probably have a list that we can check to make sure. That list, I think, was provided by the city --

MR. POTTER: Yes.

MS. MORPURGO: -- and we work with them to kind of get an idea of who would have interest in what we're doing. Then at the first meeting we had on the master plan, there were representatives of some of the associations, and we talked a little bit about the best way to reach people. They had suggested that we do a newsletter type of mailing, so that's primarily how we have been notifying people of the meetings.

AUDIENCE MEMBER: I'm sorry. I keep thinking of new things. One thing I learned tonight that I did not understand before was that the post office and one other facility are not GSA administrated. Do I understand that directly, first of all?

MS. MORPURGO: Right.

AUDIENCE MEMBER: Are those the only two

sites?

MS. MORPURGO: Well, there's the post office, and then the army has land that's permitted to them, and they have their own facility on that.

AUDIENCE MEMBER: Is that the one in the northeast corner?

MS. MORPURGO: Yes.

AUDIENCE MEMBER: Is there an expectation that the general practice on the facility will be that GSA will retain whatever it is you have, rather than having other agencies taking pieces?

MS. MORPURGO: Yeah. I mean, that's sort of been what we've done in the past and anything -- even like RTD, we do lease the land to RTD for the Cold Springs Park & Ride. That's been the practice in the past. I mean, what we will look at in the scenarios is potentially other things, but, you know, whether or not we actually get to that point of selling off things or selling off land, you know, who knows, but we will be looking at a wide range of potentials in the EIS, and in the master plan.

AUDIENCE MEMBER: Like the underground -- all of that underground facility that's there?

MS. MORPURGO: FEMA, Federal Emergency Management Agency, yes. A lot of -- they -- what is

it? Do they run part of that facility in terms of -- no, I guess we run all of it now. So most of the buildings at the Federal Center, we do operate, and then agencies are housed in them. We operate them for them.

Anything else?

(Pause.)

MS. MORPURGO: Okay. Well, we'll stick around for a while. I know some people have had a chance to look at the information we have on the master plan, and I encourage you to come up and take a look at this, and ask us any questions that you have. We appreciate you coming out this evening and for giving us your input and letting us know what your concerns are, and the things you think are important that we should look at in this process. Thank you very much.

(The hearing concluded at 7:24 p.m., December 7, 1995.)

STATE OF COLORADO)
) ss. REPORTER'S CERTIFICATE
COUNTY OF DENVER)

I, Tracy L. Newton, do hereby certify that I am a Registered Professional Reporter and Notary Public within the State of Colorado.

I further certify that this hearing was taken in shorthand by me at the time and place herein set forth and was thereafter reduced to typewritten form, and that the foregoing constitutes a true and correct transcript.

In witness whereof, I have affixed my signature and seal this 15th day of December, 1995.

My commission expires June 10, 1997.

Tracy L. Newton

Tracy L. Newton, RPR
1873 South Bellaire Street, Suite 1220
Denver, Colorado 80222



DFC Integrated Studies
DENVER FEDERAL CENTER

Appendix F: Public Hearing Transcript, April 9, 1997

COPY

PUBLIC HEARING FOR THE DRAFT ENVIRONMENTAL IMPACT STATEMENT OF THE DENVER FEDERAL CENTER MASTER SITE PLAN

Taken at 445 South Allison Parkway, Lakewood, Colorado
7:05 p.m., Wednesday, April 9, 1997

PRESENTATION BY LISA D. MORPURGO, AICP

ARV AGREN REPORTING & VIDEO, INC.
1873 S. Bellaire Street, Suite 1220 • Denver, CO 80222 • Fax: (303) 691-5024 (303) 691-5020

PROCEEDINGS

MS. MORPURGO: Thank you for coming tonight. I welcome you to the public hearing for the draft environmental impact statement for the master site plan for the Denver Federal Center. And most of you know who I am. I'm Lisa Morpurgo with the GSA, Rocky Mountain region. And this hearing is an integral part of GSA's efforts to develop a master plan for future use of the Denver Federal Center.

I'd like to just speak to you shortly about the proposed action and the alternatives addressed in the draft environmental impact statement. And I'll refer to that as the EIS from this point forward. But first I just want to tell you a little bit about the NEPA process, which is the National Environmental Policy Act, and the public's involvement under NEPA.

Tonight's hearing is one step in the process designed to evaluate the potential impact of GSA's actions needed to adopt the proposed master site plan for the Denver Federal Center. The National Environmental Policy Act, NEPA, was established over 25 years ago as a way to ensure that federal agencies consider the effects of their proposed actions on the environment and to ensure that those impacts are considered in the decision-making process. Federal

projects that are anticipated to have significant effects to the human environment require the preparation of an environmental impact statement or an EIS. Federal regulations developed through the President's Council on Environmental Quality established the EIS process and mandated review periods.

The EIS process begins with a scoping process and a public scoping meeting. And during the scoping process, the federal agency informs other government agencies, interest groups, and the public of its planned action and asks that they identify their concerns relative to the action or issues to be examined and analyzed in the environmental impact statement.

The public was notified of GSA's intent to prepare an EIS addressing the effects of the proposed master site plan at the Federal Center. Correspondence was also sent to various agencies and interested public. A public scoping meeting for the EIS was held on December 7th, 1995, at this location.

Following the scoping process, the lead agency, which in this case is GSA, prepared a draft EIS that provides details on the proposed action and analyzes the potential effects on the environment

resulting from implementation. Comments received during the scoping period were considered during the preparation of the draft EIS.

The draft EIS was prepared and distributed for review to federal, state, and regulatory agencies, as well as other groups and individuals that expressed an interest in participating in our EIS process. Public notices on the availability of the draft EIS and this public hearing were published in the Federal Register and local newspapers on March 7th, 1997. And these notices marked the beginning of a 45-day public review whereby comments on the draft EIS may be provided to GSA. Tonight's public hearing offers an additional way of providing comments on the draft environmental impact statement.

All public, government agencies, and other comments received during this period will be reviewed, considered, and addressed in the final EIS. A 30-day comment period will follow distribution of the final EIS. And based on comments received, GSA will issue a record of decision identifying the actions to be taken at the Denver Federal Center. This decision will be published in the Federal Register;

So basically we're at the draft EIS stage, which has been distributed, and having the public

hearing, and then we'll go on to the final EIS and then have a commenting period after that as well before we publish our record of decision.

Most of you got the draft EIS and, as you may have noted, it has several components. The first is a description of the proposed action. Next it talks about the purpose and need for the proposed action. Then it addresses alternatives that are evaluated in the document. It talks about the existing environment of the site and then addresses the environmental consequences of implementing the proposed action or the alternatives.

The draft EIS defines the proposed action, the purpose and need and the alternatives the agency has examined to fulfill their requirements. It then identifies the existing or the baseline resources and socioeconomic conditions and the impact expected to result from implementation of each of the alternatives. The document also identifies agencies, groups, and individuals that participated in the development and preparation of the draft EIS document.

As I mentioned, the notice of availability and public hearing for the draft EIS were published in the Federal Register on March 7th, 1997. And the final EIS will incorporate the comments received during this

45-day review period, which ends on April 28th. It's actually a little bit longer then 45 days. And the final EIS is expected to be available sometime this summer. And GSA will complete the EIS and then issue its record of decision.

I'd like to now just touch briefly on GSA's proposed action at the Denver Federal Center. And then if anyone has any comments after that, we'd be glad to take them. So I'm just going to kind of run through this, and then at the end if you have any comments, I'd be happy to take them.

Most of this, what I'm going to talk about -- all of this, actually, is addressed in the draft EIS, but I'm just going to kind of give you a little bit of a condensed version.

The DFC is a 670-acre government-owned installation, which contains over 3 million square feet of office, storage, lab, and other types of space in over 90 buildings. Over 25 federal agencies and bureaus are currently housed at the DFC.

The purpose of the proposed master site plan is to adequately plan for the efficient use and potential future development of the DFC property. The purpose of the draft EIS document is to evaluate the potential impacts of the natural and human environment

associated with the adoption and implementation of the master site plan, as well as the no-action alternative, which is simply the continuation of current development objectives and policies.

The proposed master site plan provides a framework for land uses, potential development, circulation, and open space. And under the proposed plan, the main transportation arterial would be oriented in an east/west direction.

Here is actually a map (indicating) depicting the major components of the master site plan. You can see here (indicating), this is the east -- this is east, and that's west (indicating). So that's the main arterial.

The main portals to the site would be through Gate 1 on the east and Gate 5 on the west. And Gate 1, however, may be realigned further north on Kipling Street to a location just south of Downing Reservoir to minimize potential traffic impacts on Alameda Avenue. Secondary portals would be maintained under this plan at Gates 2, 4, and 7.

Under the proposed master site plan, the potential expansion of facilities at the DFC would occur in three development stages. Development during Stage I would only occur within specified undeveloped

portions of the central core area of the DFC, just, essentially, this area here (indicating) and these red parcels identify the Stage I areas.

The central core area consists of approximately 166 acres, which have been developed with a variety of buildings, parking lots, storage yards, and landscaped and recreation spaces. The Stage I area consists of eight potential infill areas, totalling about 18-1/2 acres that have been identified. These sites would be considered a priority for further future construction for compatible development due to their proximity to existing services and infrastructure. Additional future development sites at the DFC outside of the central core area have been identified as Stage II and Stage III areas. The Stage II areas are located adjacent to the central core area and are more easily developed due to their proximity to existing roadways and utility systems. Stage III areas are further away from the central core area and are considered a lower priority for future development. And during the life of the proposed plan, it's not likely that any Stage III areas would be developed.

Just for reference, in case you can't see this, this darker peach color (indicating) is the Stage II area, and then this lighter color (indicating)

is the Stage III area.

Open space under the proposed plan would occur along the southwest and southeast corners of the site, McIntyre Gulch, the agricultural ditch, and much of the eastern and northern site boundaries. The open space district is an interconnected system of undeveloped parcels that would constitute almost 40 percent of the site. And that's depicted by this green area here (indicating).

I'm now going to just briefly explain some of the issues that were discussed in the draft EIS and how we'll conduct, if there is any public input, that portion of the public hearing.

The key issues identified at this time in the EIS include potential impacts to land use, water quality, air quality, cultural resources, and transportation and circulation.

Former land use and operational activities at the site are known or suspected to have resulted in spills and releases of hazardous materials to the environment. These land uses include munitions productions on the site during World War II and subsequent storage and use of hazardous materials on site by various federal agencies. Implementation of the proposed master site plan has the potential to

involve development activities that may disturb existing contamination sources on the site. The investigation and the remediation of suspected contamination is proceeding under a separate management program that's really independent of the master site plan and the EIS. GSA and the Colorado Department of Public Health and Environment are working in concert to conduct site characterization work and remediation actions well in advance of any of the development activities associated with the proposed master site plan. Although these investigations and measures are not part of the EIS process, information from these actions, as it becomes available, has been and will continue to be incorporated and evaluated as part of our EIS process.

Air and water quality on-site and in this surrounding area also have the potential to be impacted through demolition, construction, and operational activities associated with the proposed master site plan. These impacts, however, are not anticipated to be significant. To minimize the impacts to water quality, erosion, sediment, and storm water controls will be employed during construction -- during construction activities.

There are two structures located on the DFC

that are considered by the Colorado State Historic Preservation Officer, who's the SHPO, which you may have heard that term, to be potentially eligible for listing under the National Register of Historic Places. Both of these resources are identified by the SHPO as having potentially significant associations with the American Cold War history. The draft EIS, the original document that you received, stated -- states in Sections 3.3 and 4.3 that both of these resources are not considered eligible for listing.

This was a mistake, really, just an editing mistake in the document. And, in fact, both of these resources are eligible for listing and have been under the National Register for Historic Places. We did a historic preservation plan in concert with the EIS, and this was just a mistake in the document itself.

An errata sheet to the draft EIS, in regards to these corrections, was distributed to all recipients of the document, and it's also available here this evening. So if you did get a copy of the draft EIS, and you did not receive your errata sheet for these specific sections, please let us know, and we can make sure you get a copy of that tonight, or I can send them to you.

Building 710 is currently utilized as the

Federal Emergency Management Agency, FEMA, Region 8 Operations Center. It was constructed in 1969, and the building was previously utilized as the Defense Civil Preparedness Agency base of operations for national disasters or nuclear conflict. The building is a two-level underground structure with 36,000 square feet of space. And the building is located north of Alameda and west of 7th Street adjacent to Building 710-A, this vicinity here (indicating).

The other building is an unnumbered building identified as the Office of Civil Defense Emergency Operations Center. This is a one-level structure that's really a metal Quonset hut with approximately 2500 square feet of space. It's partially underground with several feet of earth fill on top of the structure. And the construction date of this resource is unknown, but it's suspected to have been built around or prior to 1964. It was intended to serve as a base of operations in the event of nuclear conflict. This structure is bounded by Building 60 to the north, Main Avenue to the south, 6th Street to the east, and Building 61 and 7th Street to the west. It's kind of in this vicinity here (indicating).

The possible increase in personnel at the site also has the impact to potentially -- to

potentially impact local traffic. The proposed master site plan has the potential to result in short-term minor impacts to the traffic circulation from demolition and construction activities. The proposed action is not expected to have any effect on the police, fire, ambulatory, or other public services currently provided to the community.

As I stated previously, the purpose of tonight's meeting is really to provide an opportunity for you to comment on the draft EIS. Really, you know, we can answer some clarification questions that you have and that you think are really specific, but we're really here to instead evaluate your comments and address them in the final EIS. There was some sign-up cards available when you entered the room, if you don't wish to speak tonight. I don't know if anyone filled any of those out.

Well, with that I encourage you, if you do have comments, please take one with you. Comments should be mailed before April 28th because April 28th is the closing date. And, also, if you don't have a copy of the EIS and would like one also, feel free to fill one out as well.

I guess that's about it unless anyone has any real specific questions, you can come up and ask

me, but I'll officially close the meeting now. Thank you for coming tonight. And for those of you who have given me any comments and participation, in the past, we appreciate that. And we'll be reviewing the transcript of the meeting, and any comments that we do receive, we will address and consider in preparing the final EIS. And as I mentioned, we will be accepting those comments until April 28th.. So please make sure that if you didn't sign in, you sign in, so we have a record of who was here this evening. And take a sign-up card if you think you might have any comments in the future. And thank you for attending.

(The presentation portion of the meeting concluded at 7:22 p.m., April 9, 1997.)

STATE OF COLORADO)

) ss. REPORTER'S CERTIFICATE

COUNTY OF DENVER)

I, Alan E. Bjork, do hereby certify that I am a Certified Shorthand Reporter and Notary Public within the State of Colorado.

I further certify that this meeting was taken in shorthand by me at the time and place herein set forth, that it was thereafter reduced to typewritten form, and that the foregoing constitutes a true and correct transcript.

I further certify that I am not related to, employed by, nor of counsel for any of the parties, nor otherwise interested in the result of the within proceedings.

In witness whereof, I have affixed my signature and seal this 22nd day of April, 1997.

My commission expires July 8, 1999.



Alan E. Bjork, CSR
1873 S. Bellaire Street, Suite 1220
Denver, Colorado 80222

COPY

COMMENTS MADE DURING THE PUBLIC HEARING
FOR THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR THE DENVER FEDERAL CENTER MASTER SITE PLAN

Taken at 445 South Allison Parkway, Lakewood, Colorado
7:23 p.m., Wednesday, April 9, 1997

COMMENTS OFFERED BY: Lisa D. Morpurgo, AICP
Bernard Goldman
John McMillin
Andrea Garcia

AGREN REPORTING & VIDEO, INC.
1873 S. Bellaire Street, Suite 1220 • Denver, CO 80222 • Fax: (303) 691-5024 (303) 691-5020

MR. GOLDMAN: There's no limit to what we can say encouraging public transportation, et cetera. I think the transportation part of this was probably one of the most significant parts, showing where traffic originated, where the trips originated, where they go to, how much carpooling is going on, and what the potential is for eliminating individual automobiles.

MS. MORPURGO: Right.

MR. GOLDMAN: But other than that, the impact on the community will be minimal. There's so much open space comprising the periphery that, again, whatever is happening on the site doesn't impact the community, really.

The other side of the coin is, you know, what impact does the community have on the site? And we went into that in a lot of detail, you know. Can we open it up so that meeting rooms are available, libraries are available to the community, open space is available for use by the community, with the constraints for security that we discussed, you know. exhaustively.

But other than that, there's really minimal impact, that anything that's done on the site, there's

minimum impact on the community. And I think that's a major point.

MS. MORPURGO: Right. Okay. Well, thanks.

MR. McMILLIN: Bernie, did you get a satisfactory answer to your questions about six months ago about the gulch, that it can be opened?

MR. GOLDMAN: Yes, John, I did. The -- the -- the emphasis on security is something that we just can't eliminate. The people who work on this site realistically have a concern about that people's safety.

This nut that threw a bomb at the judge yesterday. I mean, my God, he's right in the courthouse, and it took them a whole day to catch him. He walked into the courthouse and threw a bomb.

You can understand their concern about safety and security. Those of us who are not in the federal employee ranks sometimes have trouble understanding.

MR. McMILLIN: But if there is to be a security perimeter, would it not be north of the gulch?

MR. GOLDMAN: Well, it depends. How much of an enclave or a walled-off enclave are you going to make it? I don't know. What area are you going to put the security, you know, on Alameda or north of the

gulch, or whatever?

There was a lot of discussion about opening up that gulch and making it a part of the trail system so that the community can use it, and I just think there's still a basic concern about having, quote, outsiders, even though these outsiders own this place.

MR. McMILLIN: Well, you were an advocate of this, so . . .

MR. GOLDMAN: I'm sorry, John?

MR. McMILLIN: You were the leading advocate of this, that I heard, so you're convinced at this time that it's not feasible?

MR. GOLDMAN: Yeah. I have to take -- I have to be cognizant of the concerns of the employees here. If it was up to me, there'd be no fence around the place. We would take all of the real secure -- the areas that need security, the laboratories, some of the places where classified work is being done, and I would put them in a core and put an electrified fence around that and then with decreasing security as you go to the periphery.

That's not what this site study was about. That's not what the master site plan was about. I laterally received a copy of the original job description, if you will, laying out what the

contractors were supposed to do, and it was never intended to start with a clean sheet of paper and reconfigure the Federal Center in some, you know, ideal fashion that never was thought of. There were budgetary constraints that come into play there. And it's just not practical.

In fact, with the downsizing of the federal government, one of the real concerns was how many employees are we going to have here five years from now. Maybe with a shrinking government, ultimately, we're going to have fewer and fewer people here and that some of these problems will be solved by just the process of attrition.

Ideally there would be unlimited access, except for the real secure things, but that's just not the mind-set at the present time, and I really can't blame them, the people.

You and I know that some nut, who is really determined, is going to get through. We know that. John Hinckley, you know, is an example, every one of these, the people who did the Oklahoma City, the Murrah Building, the barracks in Arabia.

MR. McMILLIN: Okay. I'm talking about a driveway through this place.

MR. GOLDMAN: You and I have discussed this

in a lot of detail, and I appreciate the interplay. I think, with the present situation, there really is limited intention to open this up to the community, to make a walking path along McIntyre Gulch or anything like that. We'd love it. It would be great. There's so much potential here, but that's just not going to happen in the foreseeable future, and I'm resigned to that.

MS. MORPURGO: John, just to supplement that, you know, at one point Lakewood had approached us, specifically parks and rec, on kind of just an overall basis about land and availability for park purposes. And, you know, we did have some discussions with them and, you know, asked them to kind of submit something in writing as to what they were talking about, size and magnitude. Obviously, we have some constraints on the site for various reasons, contamination and other concerns. And quite honestly, we never heard anything back, and it's been quite a few months now, so . . .

MR. McMILLIN: I never heard anything about it when I asked them about it, too.

MS. GARCIA: This is a question, not a comment.

MS. MORPURGO: Okay.

MS. GARCIA: When you started the master plan, that was, what, about a year and a half ago?

MS. MORPURGO: Probably be -- well, a little bit longer than that.

MS. GARCIA: RTD was working on their major investment study for the western corridor of the city. The study is completed, and now they're planning on light rail coming to the western part of town, so that corridor is going to be involved. Also, more recently, RTD has decided that they're going to go for a sales tax increase in November. If that tax increase passes, the west corridor could happen sooner rather than later. What does that do for this EIS, if you want to do something within five years?

MS. MORPURGO: Well, I think the major components of the plan were actually completed before many of the conclusions were reached with the west corridor study as to which alignments you were going to do.

In fact they were -- I was on both committees, and you're on this one as well, so I know that those had been decided before, and that's why I kind of -- my participation on the west corridor thing was to kind of urge you all to consider some components of the master plan that we had already worked on.

This area here (indicating), which is the light purple, had been kind of earmarked as a potential RTD expansion area. And right now we are actually working with RTD to potentially expand the park and ride facility. It's really in the preliminary stages right now.

In terms of when and if light rail does come here, we'll need to address it at that time, in terms of what's being proposed and how it impacts the master plan and EIS and what we need to do to make sure that we analyze everything we need to at that time.

MS. GARCIA: So that could just be a potential update, something like that, to the master plan?

MS. MORPURGO: Right, right. I just think, you know, we tried to look at it as many ongoing regional planning activities and local planning activities to make sure that we incorporated all these into this plan, and whatever was done or had reached a conclusion, we tried to incorporate, but . . .

MS. GARCIA: As of what date, because you know how everything is evolving?

MS. MORPURGO: Right. I'd have to go back and actually look at when we had completed the evaluations on this and had some of the meetings. So I

know it was before the west corridor committee had reached -- or the various committees had reached their decision on which alignment, but I'd have to look up the actual date.

MR. McMILLIN: Is there anything in the plan that would limit the availability of land for an expanded parking lot, say, in a 5- or 10-year time frame?

MS. MORPURGO: The way the plan is identified now, as I mentioned, it's identified areas for potential expansion, and the rest is identified right now, in this vicinity (indicating), at least as open space, for a variety of reasons, one, for, you know, continuing an open-space component around the whole perimeter of the site for some way to get around the whole site through open space, which was an important part of the planning process, one was potential contamination areas, and the third is some wetland concerns.

So those are some constraints that were considered in developing and reaching the conclusions in the master plan. So if there were any, you know, actions proposed at a certain time that were not in concert, in the last master plan, obviously, we would have to reanalyze them.

MR. McMILLIN: But within the shaded area that you dedicated to the park and ride expansion, how many acres could you release and at what time?

MS. MORPURGO: Nothing that detailed was decided in the plan. The way the areas were, as I mentioned, outlined here was more from a constraint area and not from an evaluation of needs in the future.

MR. McMILLIN: Does that say there were no constraints to releasing that shaded area?

MS. MORPURGO: No. It doesn't say that there's no constraints. It just says that basically those were areas that were kind of identified as a good amount of land that would be available for that.

There's some constraints that were considered, like site topography and existing buildings on the site, but, specifically, when you say, is it free from any constraints, I'd have to say no, because we still have some environmental site concerns that, you know, we're still evaluating at this time and doing site characterizations, so that could be a potential concern.

MR. McMILLIN: So you listed in here how much land is shaded?

MS. MORPURGO: I believe it is listed, in the EIS, when it identifies the different parcels. I

believe it is addressed in there.

MR. McMILLIN: But there might need to be some environmental cleanup work before it is released; is that what you're saying?

MS. MORPURGO: Correct. I mean, we're using all the data of the -- of the other studies that are going on in the site characterization.

Okay. Thank you. And we've got some displays here that are really just summaries, but if you have any questions, I'll stick around for a few minutes. Thanks.

(The comments portion of the meeting concluded at 7:40 p.m., April 9, 1997.)

STATE OF COLORADO)

) ss. REPORTER'S CERTIFICATE

COUNTY OF DENVER)

I, Alan E. Bjork, do hereby certify that I am a Certified Shorthand Reporter and Notary Public within the State of Colorado.

I further certify that this meeting was taken in shorthand by me at the time and place herein set forth, that it was thereafter reduced to typewritten form, and that the foregoing constitutes a true and correct transcript.

I further certify that I am not related to, employed by, nor of counsel to any of the parties herein, nor otherwise interested in the result of the these proceedings.

In witness whereof, I have affixed my signature and seal this 22nd day of April, 1997.

My commission expires July 8, 1999.



Alan E. Bjork, CSR
1873 S. Bellaire Street, Suite 1220
Denver, Colorado 80222

DFC Integrated Studies
DENVER FEDERAL CENTER

Appendix G: Draft EIS Public Comments and Responses

THE AGRICULTURAL DITCH AND RESERVOIR COMPANY
The Golden Canal and Reservoir Company
12860 West Cedar Drive, Suite 102
Lakewood, Colorado 80228
(303) 987-2166

April 25, 1997

Ms. Lisa Morpurgo
U.S. General Services Administration
Building 41-Denver Federal Center
Post Office Box 25546
Denver, CO 80225-0546

RE: Comments Pertaining to the Draft Environmental Impact Statement for the Proposed Master Site Plan for the Denver Federal Center Located in Lakewood, Colorado

Dear Ms. Morpurgo:

Thank you for providing a copy of the Draft Environmental Impact Statement (EIS) for the proposed Master Site Plan for the Denver Federal Center. I have reviewed the document in some detail and find numerous references to The Agricultural Ditch: The Agricultural Ditch and Reservoir Company has the following comments concerning the Draft EIS:

1. **Water Quality** - We are concerned with the water quality issues associated with runoff from the surface of the Denver Federal Center into the Agricultural Ditch and also discharge from Detention Pond No. 3. The Agricultural Ditch does carry irrigation waters to numerous users and storage facilities downstream of the Federal Center and the quality of water delivered to those users and storage facilities is most critical. The EIS states that based on the result of water quality tests, total cyanide and magnesium are elevated in the Agricultural Ditch. Additionally, sulfate hardness, calcium and selenium are elevated in Detention Pond No. 3. We request Denver Federal Center pursue remediation to lower the limits of these constituents to allowable limits for storm runoff on the site and the waters which might be captured in Detention Pond No. 3. 1

2. **Storm Sewer/Storm Runoff Conveyed to The Agricultural Ditch** - As a matter of practice and policy, The Agricultural Ditch and Reservoir Company does not allow new storm sewer piping connections or storm runoff to be conveyed into The Agricultural Ditch without prior written permission from The Agricultural Ditch and Reservoir Company. Please include this statement in the EIS so that agencies proposing future development will be aware of this requirement of The Agricultural Ditch and Reservoir Company. 2

3. **License Agreements for Crossing the Agricultural Ditch or Development Potentially Impacting the Agricultural Ditch** - Prior to initiating the design or construction of any structure crossing the Agricultural Ditch or development adjacent to the Agricultural Ditch, proposed plans will need to be reviewed and a license agreement approved by the Board of Directors of The Agricultural Ditch and Reservoir Company. License agreements are intended to protect the maintenance, operation and conveyance of irrigation flows in The Agricultural Ditch right-of-way. Please include this statement in the EIS so that agencies proposing future development will be aware of this requirement of The Agricultural Ditch and Reservoir Company. 3

4. **Protection of the Agricultural Ditch Carrying Capacity** - Numerous users of Agricultural Ditch Water and The Agricultural Ditch and Reservoir Company Storage Facilities require that adequate ditch capacity be maintained through all stretches of the ditch upstream of those locations. Therefore, it is most imperative that development of the Denver Federal Center not impact the capacity of the Agricultural Ditch to convey these waters. 4

The address of The Agricultural Ditch and Reservoir Company listed on Page 139 has been changed. Our new address is as follows: 5

12860 West Cedar Drive, Suite 102
Lakewood, CO 80228

Please make this change to your records so that we may continue to receive information pertaining to the EIS and other Denver Federal Center activities.

Thank you for including us in the Draft EIS review process. Should you have any questions please contact Gary Theander, Manager, at 987-2166

Sincerely,

THE AGRICULTURAL DITCH AND RESERVOIR COMPANY

Gary D. Theander

Gary D. Theander
Manager

c: Wally Welton
Vic Quinn
Hal Bishop
File - Denver Federal Center (EIS) AGD
File - AGD General Correspondence
File - Theander Correspondence

The Agricultural Ditch and Reservoir Company
12860 West Cedar Drive, Suite 102
Lakewood, CO 80228

Response to Comments as numbered on the following correspondence:

1. Comment noted. Appropriate remediation measures are currently being evaluated through coordination with the Colorado Department of Public Health and the Environment.

2. The requested statement has been incorporated into the Final EIS document (see Section 4.1.3).

3. The requested statement has been incorporated into the Final EIS document(see Section 4.1.3).

4. Reference to this requirement has been incorporated into the Final EIS document (see Section 4.1.3).

5. The new address has been incorporated into the Final EIS Distribution List (see Section 10.4.

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION
Region 6 Planning/Environmental

2000 South Holly Street
Denver, Colorado 80222
Phone: (303) 757-9372
Fax: (303) 757-9907

April 24, 1997

Ms. Lisa Morpurgo, AICP
Portfolio Management
General Services Administration
Denver Federal Center
P.O. Box 25546
Denver, Colo 80225-0546

Re: Comments on Draft Environmental Impact Statement for Denver Federal Center Master Site Plan Lakewood, Colorado

Dear Ms. Morpurgo:

The Colorado Department of Transportation (CDOT) Region 6 has completed their review of the DEIS and has comments in the areas of traffic and hazardous waste.

Traffic

Relocation of the Gate #1 on Kipling Street as proposed, will require a traffic study including traffic signal progression analysis. Rephasing impacts will also require evaluation by CDOT. 1

Hazardous Waste

The document fails to identify a potentially affected medium which is the subsurface groundwater remediation and monitoring system at the DFC. A subsurface groundwater remediation has been constructed or is still under construction at the facility and is located along a part of the DFC's eastern boundary adjacent and parallel to Kipling Street (State Highway 391). In general, the purpose of the system is to stop highly contaminated groundwater from migrating offsite to the east. On page 62 of the Draft EIS, the issue was acknowledged as "Contamination remediation at the DFC is beyond the scope of this EIS, and is currently being addressed as a separate issue by the GSA." Because access to the remedial system and its components must be maintained in 2

the future, its presence and the potential impacts to it are worth more extensive consideration in the document than as presently written.

The groundwater remediation system at the DFC consists in part of a subsurface wall that keys into the top of bedrock. The wall is designed to allow groundwater contaminated with elevated concentration of chlorinated solvents to flow through more permeable areas of the wall that are constructed of iron filings to alter chemically (and render less toxic) the contaminated groundwater plume. Additionally, several dozen subsurface monitoring wells are present on and east of the facility that could also be impacted by potential construction at the DFC. We are unaware if additional subsurface or surface soil or groundwater remediation structures exist at the facility that could be impacted by potential future construction at the DFC. 3

We do not believe the presence of the items noted above will change the significance of impact to the affected environment at the DFC for either the Proposed Action or No Action alternatives. However, consideration of the effects of potential alternatives to the groundwater remediation and monitoring system should be more fully considered, primarily due to its cost of installation and intended purpose and benefit. 4

Thank you for the opportunity to comment on the Draft EIS. You may contact Curt Eckhardt of my staff and 757-9930 if there are any questions regarding these comments.

Sincerely,

Robert K. Sakaguchi
Region 6 Planning/Environmental Manager

State of Colorado Department of Transportation
Region 6, Planning/Environmental
2000 South Holly Street
Denver, CO 80222

Response to Comments as numbered on the following correspondence:

1. Comment noted. The requirement for the appropriate traffic analysis studies to be conducted prior the decision relocate Gate #1 has been incorporated into the Final EIS document (see Section 3.5).

2. Comment noted. Issues related to the remediation of hazardous substances at the DFC are addressed in the GSA's Sitewide Environmental Assessment (SEA) document. For detailed information on these issues, please refer to the SEA document. A Final Consent Order was signed by the Colorado Department of Public Health and Environment and the GSA on July 18, 1997 to establish the requirements and schedule for future site characterization and remediation activities.

   Additional information relating to the subsurface groundwater remediation system operating at the DFC is available from the Federal Highway Administration (FHWA). The FHWA published an Environmental Newsletter (No. 5, April 1997), which provides updated information on the status of the on-going groundwater containment and remediation system at the DFC. This system was initiated in June of 1996 to treat polluted groundwater flowing through specially designed "gates" to cleanse passing water as it moves off the DFC property. The FHWA reports that this system has had a significant impact on the control of contaminants in the groundwater. The FHWA has also continued their investigation of the source area and removal of contaminants. The groundwater containment and remediation system includes monitoring wells that evaluate water quality before, during and after passing through the treatment system. The monitoring wells are installed across a quarter mile area to provide this data. Monthly sampling (during the 90 day evaluation period) indicated proper system functioning, therefore, most of the wells are currently sampled quarterly. However, the FHWA monitors a few wells on a more frequent basis because of the data inconsistencies observed during the 90-day evaluation period. As of March 1997, the data shows that the system is operating successfully. One of the greatest success of the groundwater containment and remediation system is that it is a long-term groundwater treatment with negligible (perhaps zero) operation and maintenance costs, which is a mutually beneficial situation for the FHWA, state regulators, and the community.

3. Comment noted.

4. Comment noted. See response #2.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

April 28, 1997

RE: 8EPR-EP

Lisa Morpurgo, AICP
Portfolio Management
General Services Administration
Denver Federal Center
P.O. Box 25546
Denver, Colorado 80225-0546

Delivered by facsimile
Delivered by U.S. Postoffice

RE: Draft Environmental Impact Statement - Denver Federal Center Master Site Plan - Lakewood, CO

Dear Ms. Morpurgo:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA), the Region VIII office of the Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Denver Federal Center Master Site Plan. We appreciate your efforts and cooperation during our review. We offer the following comments for your consideration in preparing the Final EIS.

The document covers a wide range of activities but the choice of alternatives was limited. As a campus situation, options and solutions to current and future situations are available to the GSA. These options are not usually available in single building sites and do not appear to have been considered in this document. 1

Information in the document was often vague. The document did not present a clear picture of the priorities and exactly how issues with hazardous sites will be handled. 2

The referenced documents presented more information, but did not clarify actions, priorities, potential impacts or exposures under the Master Site Plan(MSP). 3

This document should pull together all of the information and provide a clear discussion of the definitive alternatives, options for activities, impact on humans and the environment, mitigation efforts and monitoring efforts to minimize impacts. Full disclosure of impacts and the baseline environmental conditions should be submitted as a single presentation. 4

Based on the procedures EPA uses to evaluate the environmental impacts and the adequacy of the information provided on the proposed actions and alternatives, the EPA Region VIII rates the Draft Environmental Impact Statement (DEIS) for the Denver Federal Center Master Site Plan as category EC-2 (Environmental Concerns,

should be avoided to fully protect the environment. Additionally, the EIS does not contain sufficient information to fully assess environmental impacts that should be avoided and specific mitigation methods to minimize those impacts. 5

We have enclosed additional specific comments discussing our concerns. We have also enclosed a number of documents and references that we feel may assist you in your preparation of the Final EIS. If you have questions related to our comments, please contact Toney Ott, at (303) 312-6909.

Sincerely,

/s/

Carol L. Campbell, Director
Ecosystems Protection Program
Office of Ecosystem Protection and Remediation

Enclosures

cc: OFA, GSA contact
D. Anderson, CDPHE

Water Quality, Hydrology and Wetlands

The DEIS does give limited information on the water quality of the streams/ditches and wetlands on the DFC. It is not clear if there are water quality standard violations and to what extent the activities on the DFC contribute to the impairment of these waters. A comparison of the water quality and standards should be included in the Final EIS. An analysis of the impact of activities on the water bodies should also be included in the Final. The DEIS specifically states that future activities on the DFC will impair water quality of waters of the United States. This should be mitigated or eliminated if possible. It is not clear if the "discharge pipes" referred to on page 25, are storm water or point source discharges. 6 7 8

Under Section 303(d) of the Clean Water ACT (CWA), Colorado must list water bodies that are impacted. The DFC water bodies do not seem to appear on the 1996, but the State of Colorado is the primary authority and should be contacted. GSA should contact the State with the information they have. 9

The list of regulatory references on page 25, Section 3.1.3. for the "hydrology and water quality" resource should include the Resource Conservation and Recovery Act (RCRA). This would be consistent with the discussion of RCRA applicability on the bottom of page 29. Additional comments on water quality, surface and ground water, hydrology which address RCRA and CERCLA concerns, are found under the section entitled **Coordination with RCRA and CERCLA efforts.** Specific information on the seep discussed on page 41, Table 6, Site J should be provided within this document. 10 11

EPA is concerned that not all potential indirect, adverse impacts to wetlands have been evaluated or disclosed. Specifically, developed flows resulting from additional impervious surfaces will likely produce stormwater. We are concerned that the stormwater will need to be treated, **preferably using created wetlands**, and detained on-site to be released at historic flow rates (this will hopefully protect off-site wetland resources by slowing erosion). These developed flows will likely involve and adversely impact (through inundation) the wetland resources on the DFC property. There is no information in the wetland sections that identify this potential impact and or solutions for the increase in stormwater and the pollutants it carries. 12

Further, Reference is made to the Executive Order 11990 -Protection of Wetlands, but no language exists which identifies the need for GSA to "provide leadership ..and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities.." We believe this EO places an additional burden on Federal Agencies to protect wetland resources. The document refers to the potential that during site evaluations for building development, the Corps of Engineers permit requirements will require and therefore result in wetlands impact avoidance. This assertion may not be 13

true as the construction projects will likely be covered under nationwide permits which do not necessarily require avoidance if mitigation is offered -- or-- the building development may have only indirect impacts to wetland (loss of hydrology from building foundations in close proximity to the wetlands) and will not require a permit of any kind, yet the impact may still occur. 14

In summary, the document falls short in disclosing the potential environmental impacts to wetlands other water bodies on the DFC, both direct and indirect, resulting from construction activities and stormwater. The mitigation or avoidance of these impacts is not discussed and could lead to violations of the CWA or at a minimum impact environmental conditions. 15

VEGETATION

Discussions of native vegetation on the DFC included several species of non-native plants, including some plants considered noxious and potentially harmful to the native ecosystems on the DFC, down-wind and down-stream of the DFC. These include but are not limited to Russian olives, purple loosestrife, and tamarisk.. There are a number of federal and state agencies which can provide information on removal, replacement of dead plants, and substitute native plantings. A pamphlet on purple loosestrife is enclosed. 16

Coordination with RCRA and CERCLA efforts

The second paragraph of page 3, Section 1.2 should be expanded to clarify the role of GSA as "landlord" of the DFC property and the required role of the U.S. Army Corps of Engineers (COE) to address the Denver Ordinance Plant (DOP) as a Formerly Used Defense (FUD) site. The current COE status of the DOP, as of January 1997, is summarized in the enclosed executive summary document. 17

The DEIS indicates that the public's concern regarding contamination at the DFC from past use as an ammunition site has been addressed in the DEIS. While progress is being made to address contamination through RCRA Interim Measures (IMs), but these concerns are not yet fully addressed. The Consent Order has not yet been signed and formal deferral of CERCLA authority/procedure for pre-remedial work has not yet been completed. For this reason, and the need to provide full disclosure under NEPA, section 1.4 should be expanded or an additional subsection should be added to clarify State RCRA Corrective Action timetable(s) for facility wide clean-up, COE FUDs prioritization, and parallel CERCLA Section 120 requirements for pre-remedial activities. The deferral process from CERCLA to RCRA and use of the COE as a "contractor" for RCRA should be clarified. This additional information and clarification will support the conclusions and Section 4.10 regarding potential conflicts with Federal and State policies. 18

Page 24, Section 3.1.3: This section combines surface and groundwater factors. Separate sections for surface water and groundwater should be expanded and references made to the Preliminary Assessment (PA) or facility wide RCRA Corrective 19

Action Plans. The findings of the Interim Measures Containment Structure (IMCS) along Kipling should be included in a separate section on groundwater.

Page 25, Section 3.1.3. The list of regulatory references for the "hydrology and water quality" resource should include the Resource Conservation and Recovery Act (RCRA). This would be consistent with the discussion of RCRA applicability on the bottom of page 29. 20

Page 28, Section 3.1.3: An additional table is needed to augment Table 2. The additional table should include the parameters for chlorinated compounds addressed in the Interim Measures and other break-down products or ammunition transformation compounds related to facility wide investigation of explosives/ammunition residues, if any. 21

Page 28, Section 3.1,3: Paragraph 6 should be modified as a separate section that addresses the topic of Surface Water/Groundwater Interaction and the potential migration pathway(s) from surface water to ground water in reference to the CERCLA PA that was completed in 1996 and future RCRA work. 22 The hydro-geologic cross section that is a part of the RCRA IMCS should be included or referenced. 23 The Figures in the DEIS that locate underground utilities and other conduits should be related to this section as potential encumbrances to the development plans. 24 The buried utilities may be migration pathways for hazardous substances.

Page 40, Section 3.2.3 and B.O.; These sections confirm the presence of migratory waterfowl and waterfowl habitat at the DFC. A letter from the Fish and Wildlife Service (FWS) is included that addresses Endangered Species. A letter addressing the relationship of development/construction for the MSP and the facility wide corrective action and remedial actions through RCRA/CERCLA/FUDs investigations should be included in the Final EIS. The letter should specifically address the intent of the Migratory Waterfowl Act. 25

Page 46, Table 8: A cross reference to the units identified in the RCRA RFA and/or CERCLA PA should be made as a note to this Table. 26

Page 68, Section 3.4.7.4: This section indicates that abandoned natural gas lines do not pose difficulties for proposed development. This section should be expanded to address the ballast at the base of the natural gaslines or the conduits formed at the base of the pipeline and substrate as potential migration pathways for hazardous substances. 27

Page 83, Section 4.1.3: This section should be divided into separate subsections that address groundwater, surface water, and the potential migration pathway(s) from contaminant sources that are identified in the PA and future RCRA work. Each subsection should relate the planned development activities with the remedial activity time frames. 28

Page 102, Section 4.4.6: This section should be expanded to include some definitions of those land areas that are dedicated to short term or long term corrective 29

action structures, such as the IMCS, monitoring well locations, pr other remediation devices.

Page 103, Section "Anticipated Consequences": This section indicated "...implementation through a process that is separate and independent of the EIS and MSP". This premise is not sound, because the time frame for the remediation of contaminated areas and the time frame for the development of the MSP must be considered together, especially since they essentially overlap. A Figure or other illustration that shows two parallel time lines is necessary. 30

Page 104 & 105, Special Use Districts: The investigations of potential contamination at the proposed Special Use Districts shown in Figure 26 and potential corrective action activities must be completed prior to dedication of these areas for intended uses involving human populations (bus stops). This section should be cross-referenced with the PA and future RCRA Corrective Measures Implementation schedules that are being developed through the CDPHE and GSA. 31

Pollution Prevention

The Draft EIS does not address Executive Order requirements for pollution prevention, affirmative procurement, alternatively fueled vehicles, and requirements under the Pollution Prevention Act of 1990. We offer comments in the enclosed attachment on how GSA may discuss these issues in the Final EIS. 32

Enclosure: Pollution Prevention Specific Comments

The Pollution Prevention Act of 1990 establishes a national policy that states that pollution should be prevented at its source. Where it cannot be prevented, waste should be recycled in an environmentally safe manner. If the waste cannot be prevented or recycled, it should be treated and disposed in an environmentally safe manner. Executive Order 12856 commits Federal agencies such as GSA to comply with the Pollution Prevention Act and requires Federal agencies to develop and implement pollution prevention plans for many of their facilities. 33

Under the Energy Policy Act of 1992 and Executive Order 12844, GSA and other Federal tenants at the DFC are required to take a leading role in the purchase and use of alternatively fueled vehicles. The Department of Energy (DOE) has designated the metro Denver area as the second of DOE's Clean Cities. DOE established the Clean Cities program to coordinate city-based alternative fuel projects that decrease America's dependence on foreign oil, reduce tail pipe emissions and develop domestic fuels. The Clean Cities program has established a goal of 50,000 alternatively fueled vehicles operating in Colorado by the year 2000. 34

In addition, Executive Order 12873 on Federal Acquisition, Recycling and Waste Prevention strengthens the requirements under the Resource Conservation and Recovery Act Section 6002 by requiring Federal agencies to incorporate waste prevention into their daily operations, consistent with the demands of efficiency and cost effectiveness. This Executive Order also requires Federal agencies to comply with Executive Branch policies for the acquisition and use of environmentally preferable products and services. 35

Finally, Executive Order 12902 on Energy Efficiency and Water Conservation directs Federal agencies and facilities to increase efforts to conserve energy and water by improving efficiency. Under this Executive Order, each agency will conduct a survey of all its facilities and develop a 10-year plan to conduct comprehensive energy and water audits. Every Federal facility is required to contribute toward an agency wide conservation and reduction goals. Guidance in the Executive Memorandum on Environmentally Beneficial Practices on Federal Landscape Grounds also specifies the use of native plants, practices minimizing the adverse effects on natural habitat, pollution prevention and water and energy conservation. 36

At both the national and local levels, GSA has embarked on a number of pilot projects to implement these statutory and Executive Order requirements. The Draft EIS should discuss their progress to-date in each area and their plans to enhance these programs under the options for future action identified in the MSP. For example, GSA is improving its standard Solicitation for Offers to include designated affirmative procurement items. GSA has also established a national goal to increase their use of recycled products in public buildings. In 1993, GSA and EPA signed a Memorandum of Understanding to examine the materials used in the operation of Federal buildings and promote environmentally preferred technologies (for instance, cleaning products) in the Federal work place. Also, at the national level, GSA has formed a partnership 37

with EPA to revise the SFO for buildings leased for EPA occupancy to incorporate environmental and recycling provisions. In building design for EPA offices, a "green rider" includes specifications for high efficiency heating and air-conditioning equipment with automated controls, energy efficient lighting, use of day lighting, and low flow plumbing fixtures. An FAA building in another Region has included requirements for environmentally beneficial landscaping. Finally, GSA is promoting the use of alteratively fueled vehicles across all civilian Federal agencies.

Colorado State University with funding and participation by EPA Region VIII conducted in June 1996 a multimedia assessment of existing and potential pollution prevention opportunities at the DFC. GSA is retrofitting their lighting to energy efficient 32 watt fluorescent lights and electronic ballasts. They are implementing energy efficiency and demand reduction measures for the heating, ventilating and cooling systems. They have implemented an office paper recycling program. Some tenants also recycle cans and printer toner cartridges. Durable, reusable dishware and utensils are provided in the cafeteria in Building 41. Unsold prepared food from the cafeteria is donated to charitable organizations. Some bathroom faucets have been fitted with aerators to limit water flow to approximately 2.5 gallons per minute. Building 67, occupied by the Bureau of Reclamation, is piloting low flow bathroom fixtures and xeriscaping. The contract for grounds maintenance limits chemical usage on lawns and trees and specifies water conservation measures. About 95% of the ammunition used at the Firing Range is jacketed ammunition, reducing the amount of lead contamination. GSA and other tenant agencies use alternatively fueled vehicles in their fleets. GSA should be able to provide information on numbers of these vehicles based at the DFC. Even for the no action alternative in the EIS, there should be a commitment to continue and expand these pollution prevention measures to meet statutory and Executive Order requirements. 38

We also learned that while there is DFC-wide metering of energy and water use, individual buildings are not metered for use of these resources. This makes it extremely difficult to obtain baseline data and to measure the effectiveness of existing and future efficiency measures. New buildings should be individually metered. 39

Another source of information on water efficiency opportunities is Denver Water Department (DWD) audit of the DFC conducted in April 1991. DWD examined water use, recommended conservation measures and estimated the savings from implementation. 40

For the moderate growth scenario, GSA should commit to additional design features to enhance energy and water efficiency, develop alternative energy, expand recycling, reduce the use of hazardous materials, and increase the purchase and use of recycled content products. Simple examples of designing for the environment include taking advantage of natural sunlight in building orientation and layout, using low-e window coatings, using native drought resistant vegetation, and planting trees for natural shading to reduce heating and air-conditioning needs. More technical examples could include exploring solar energy technologies and co-generation options. 41

Under the moderate growth and contracted use options in the EIS, there should be

discussion about restricting uses to those that are appropriate to the DFC. For example, a vehicle maintenance shop may not be appropriate use. However, if an agency or contractor wanted to locate a vehicle maintenance shop at the Federal Center, that agency or contractor should only be allowed a shop, if they implement state of the art pollution prevention measures to minimize the potential for environmental contamination. 42

Construction of new facilities under either the moderate growth or contracted use options should include requirements for using environmentally preferable products and recycled content products. The same would be true for renovation under the no action alternative. 43

As the DEIS states on pages 87-88, air quality and the sound environment at the Denver Federal Center (DFC) and the Region of Influence have the potential to be impacted by development and operational activities associated with the Proposed Action. Even though the estimates of incremental air quality and noise impacts are low, GSA should do as much as possible to support alternative non-polluting modes of transportation for commuting and for travel to destinations on the Federal Center. The MSP should include a commitment that as roads are improved or modified, bicycle lanes and signage will be added. Walking paths should be expanded to provide pedestrian access from current paths to any new buildings constructed at the Federal Center. GSA could work with tenants to develop employee/supervisor education on the benefits of bicycle commuting. Adequate secure, covered bicycle parking should be provided for employees who commute to work on bicycles. Some companies have used bicycle lockers. Other Federal agencies have had success placing bike racks in locked bicycle cages near loading docks or in garage areas. The Final EIS should discuss efforts such as these that GSA will employ to support alternative transportation. 44

To reiterate, the final EIS should review the current pollution prevention program at the DFC and discuss how GSA will incorporate source reduction, recycling, energy and water conservation, environmentally beneficial landscaping, affirmative procurement, alternative modes of transportation and Federal use of alternatively fueled vehicles into the alternative scenarios of the MSP. 45

Attached for your information are the following documents:

1. Multimedia Pollution Prevention Assessment Report, MSW-10, Denver Federal Center Building 20, Colorado State University Waste Minimization Assessment Center, September 27, 1997. Fact Sheet and Executive Summary only. Let us know if you want the full report.

2. Executive Order 12844, Federal Use of Alternative Fueled Vehicles, April 21, 1993.

3. Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, August 3, 1993.

4. Executive Order 12873, Federal Acquisition, Recycling and Waste Prevention, October 20, 1993.

5. Denver Water Department, Nonresidential Water Audit, Site Report for Denver Federal Center, April 1991. Cover page only. Let us know if you want the report.

United States Environmental Protection Agency, Region VIII
999 18th Street, Suite 600
Denver, CO 80202-2466

Response to Comments as numbered on the following correspondence:

1. The proposed master site plan was designed to provide a framework for the evaluation of development opportunities at the DFC and establish a basis for decision making. It was also designed to incorporate the flexibility to accommodate a range of possible futures. The future development opportunities will vary greatly depending on economic, political, and institutional conditions that will ultimately drive the administration and management of the DFC. In the plan, a range of possible future conditions are introduced in the form of potential development scenarios. These scenarios represent points along a continuum of possible future conditions, and are based on potential levels of activity for the DFC over the next twenty years. The scenarios described in the plan include status quo, decreased use, and moderate growth. The analysis within the EIS assumed the potential for impacts would be greater under the moderate growth scenario as compared to the status quo or decreased use scenarios. The EIS evaluates two alternatives: the implementation of the Master Site Plan (proposed action); or the continuation of ongoing development objectives and policies (no action). The EIS does not evaluate any development "options or solutions" not included as part of the Master Site Plan.

2. Issues related to the remediation of hazardous substances at the DFC are addressed in the GSA's Sitewide Environmental Assessment (SEA) document. For detailed information on these issues, please refer to the SEA document. A Final Consent Order was signed by the Colorado Department of Public Health and Environment and the GSA on July 18, 1997 to establish the requirements and schedule for future site characterization and remediation activities.

3. Please refer to the SEA document.

4. Comment noted. Please refer to the SEA document

5. Comment noted. Please refer to the SEA document

6. Water quality standard violations are related to point source discharges. At the beginning of World War II the Denver Ordnance Plant did, for a brief period of time, discharge into the Agricultural Ditch and Downing Reservoir. The Denver Federal Center is connected to the Denver Metropolitan wastewater treatment system and there are no point sources. Table 2: Water Quality Testing Results for Surface Water Resources at the DFC (see Section 3.1.3) is representative of the ambient quality of surface waters on the DFC.

   Non-point sources do enter into McIntyre Gulch from both the Denver Federal Center as well as from runoff west of the Denver Federal Center. Part of the drainage from Union Boulevard is channeled into the three stormwater detention ponds on the north side of the facility. Stormwater from the developed part of the DFC is conveyed through pipes into McIntyre Gulch.

In personal communications with the Colorado Department of Public Health and Environment (Dennis Anderson) none of the surface water is designated as impacted under Section 303 (d) of the Clean Water Act.

A comparison of water quality to stream standards indicates that most analytes are below detection limits and those parameters that are detected are below standards except for sulfate in detention Pond #3 which is slightly above the standard of 250 mg/l with a concentration of 280 mg/l. Table 2: Water Quality Testing Results for Surface Water Resources at the DFC, now includes applicable water quality standards for comparison.

7. The anticipated impacts of the proposed action on hydrology and wetlands are described in Sections 4.1.3 and 4.2.3, respectively, of the EIS document. In Section 4.1.3, it states that neither short-term nor long-term impacts are anticipated to be significant to water quality at the DFC or within the ROI. It is assumed that standard erosion control and stormwater management practices will be implemented for all construction/demolition activities associated with the proposed action. No additional mitigation measures are necessary at this time. However, each development will be reviewed to insure appropriated water quality protection measures are taken at the time of implementation.

8. This sentence has been rewritten to provide better clarity regarding McIntyre Gulch use as a receiving body for stormwater on the DFC (see Section 3.1.3).

9. On August 8, 1997 the Colorado Department of Public Health and Environment, Water Quality Control Division, Assessment Unit confirmed that none of the DFC surface water resources are listed by the state pursuant to the requirements of Section 303 (d) of the Clean Water Act. Please refer to Table 2: Water Quality Testing Results for Surface Water Resources at the DFC, in Section 3.1.3.

10. The requested reference (Resource Conservation and Recovery Act) is incorporated into the appropriate section of the Final EIS document (see Section 3.1.3).

11. No additional information on the referenced seep area is available for incorporation into the Final EIS document. On-going site characterization activities at the DFC associated with the Consent Order will provide additional information relating to the seep area.

12. Additional studies of wetland resources at the DFC have been conducted by the U.S. Army Corps of Engineers since the completion of the Draft EIS document. Information from these studies is not yet available for incorporation into the Final EIS document.

13. Additional information relating to the requirements of Executive Order 11990, Protection of Wetlands, has been incorporated into the Final EIS document (see Section 4.2.2)

14. Comment noted.

15. Comment noted. Additional information relating to mitigation measures for indirect impacts to wetlands has been incorporated into the Final EIS document (see Section 4.2.2). See response # 12.

16. A management recommendation for the programmed removal of these and similar invasive exotic species has been incorporated into the Final EIS document (see Section 4.2.1).

17. GSA is charged with the overall management and operation of the DFC. Through its compliance with the Consent Order, GSA is demonstrating its commitment to the community by addressing potential environmental concerns that may have resulted from historic industrial activities at the site. The roles of past and current tenants of the site (including the U.S. Army Corps of Engineers) with respect to existing contamination will be investigated by the GSA, as stipulated in the Consent Order.

18. Comment noted. See response #2.

19. Comment noted. See response #2.

20. The requested reference is incorporated into the Final EIS document (see Section 3.1.3).

21. Comment noted. See response #2.

22. Comment noted. See response #2.

23. Comment noted. See response #2.

24. Comment noted. See response #2.

25. Comment noted. See response #2.

26. Comment noted. See response #2.

27. Comment noted. See response #2.

28. Comment noted. See response #2.

29. Comment noted. See response #2.

30. Comment noted. The Consent Order establishes requirements and a schedule for site characterization and remediation activities at the DFC. Implementation of Master Site Plan-related projects is contingent upon the status of the Consent Order-related projects.

31. Reference to the Consent Order has been incorporated into the Final EIS document (see Section 4.4.6) See response #2.

32. Information relating to on-going and planned pollution prevention measures at the DFC is incorporated into the Final EIS document (see Section 4.6).

33. See response #32.

34. See response #32..

35. See response #32.

36. See response #32.

37. See response #32.

38. See response #32.

39. See response #32.

40. Information relating to pollution prevention efforts at the DFC has been incorporated into the Final EIS document (see Section 4.6). The DFC was the subject of *Nonresidential Water Audit* prepared in 1991 by the Denver Water Department (DWD). Information regarding water usage at the installation was collected for this investigation in August of 1990. The DFC receives its water supply from the DWD through four water meters that record the flow to the site. Information from these meters is collected on a monthly basis. The principal types of water use allocations identified at the DFC include: domestic; facility cooling and heating; irrigation/landscaping; and once-through cooling. It was estimated that the DFC uses 61,277,000 gallons of water per year to irrigate approximately 32 acres of landscaped area. The following table summarizes the audits' monthly water consumption data (in thousands of gallons) for the DFC during the years of 1988 and 1989.

	Jan	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1988	16,865	19,662	19,281	19,309	25,819	39,748	26,832	30,394	29,788	23,740	13,354	14,903	279,695
1989	15,792	14,621	15,843	17,613	19,834	26,894	29,817	29,403	22,252	22,628	14,828	14,834	244,359
Average Use	16,329	17,142	17,562	18,461	22,827	33,321	28,325	29,899	26,020	23,184	14,091	14,869	262,027

In addition to performing an audit of water consumption use, the study included the following water conservation recommendations:

- Domestic Use: installation of low flow toilets; sink aerators; and the replacement of continuous flow water fountain in Building 56 with as-needed flow water fountain.
- Facility Heating and Cooling: conduct a leak detection survey; metering of cooling towers and boiler makeup-water lines; and repair faulty line on Building 67
- Irrigation/Landscaping: reduce water time to 30 minutes every third day during the irrigation season.
- Once Through Cooling: once-through cooling units in Building 25 should be eliminated; and the retrofit or replacement of units with air-cooled equipment or the reuse of water for landscaped irrigation.

41. See response #32.

42. See response #32.

43. See response #32.

44. Information relating to on-going and planned transportation improvement projects and programs at the DFC is incorporated into the Final EIS document (see Section 4.5 and 4.6).

45. See response #32.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA, NEBRASKA 68102-4978

April 16, 1997

REPLY TO
ATTENTION OF

Planning Division

Ms. Lisa Morpurgo
General Services Administration
Portfolio Management
P.O. Box 25546, DFC
Denver, Colorado 80225-0546

Dear Ms. Morpurgo:

We have reviewed the document titled "Draft Environmental Impact Statement, Denver Federal Center Master Site Plan dated March 1997. Although this office of the Corps of Engineers may not have been on your distribution list, we apparently were asked to take a look at it because the Denver Federal Center is physically located within our District boundaries. 1

Our review found the Draft EIS to be well-written and complete. With the exception of a few misspellings here and there, which are not documented in this letter because they do not detract significantly from the overall quality of the EIS, we have no other comments. 2

Please feel free to contact Mr. Gerard Mick of this office at (404) 221-4604 if you have any questions.

Sincerely,

Candace Thomas

Candace M. Thomas
Chief, Environmental Analysis Branch
Planning Division

Printed on Recycled Paper

Department of the Army
Corps of Engineers, Omaha District
215 North 17th Street,
Omaha, NE 68102-4978

Response to Comments as numbered on the following correspondence:

1. This address has been added to the distribution list for the Final EIS document (see Section 10.2).

2. Comment noted.

A NOTE
from the desk of
John R. Schumaker
March 10, 1997

Larry,

I have reviewed the Draft EIS for the Denver Federal Center Master Plan. In general the EIS states that the new master plan will have little or no effects on all the areas studies. The areas studied range from effects on hydrology and wildlife to community issues.

The master plan does not address the issue of remediation from ground water pollution based on old Army Ammunition Plant activities and the Fish and Wildlife Laboratory because these issues have already been addressed and remediation plans are underway. 1

The master plan projects little change in the current uses of the site and indicates that most projected growth and building will be in the existing developed areas. 2 The plan does propose a change in the location of the main gate, Gate #1, on Kipling. The change is to move the gate north to the south edge of Downing Reservoir. 3 I believe this is being done to relieve a traffic issue at Alameda and Kipling.

I see no issues of major concern to BLM operations. 4

John R. Schumaker
U.S. Department of the Interior, Bureau of Land Management
Denver Federal Center

Response to Comments as numbered on the following correspondence:

1. Comment noted.

2. Comment noted.

3. Comment noted.

4. Comment noted.

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

March 19, 1997

Lisa Morpurgo
Portfolio Management (8PP)
U.S. General Services Administration
Building 41 - Denver Federal center
P.O. Box 25546
Denver, CO 80225-0546

Re: Denver Federal Center - Draft Environmental Impact Statement

Dear Ms. Morpurgo:

Thank you for the opportunity to review and comment on the above document.

We find that cultural resource concerns have been satisfactorily addressed in the document. In addition, we concur with your finding that the adoption and implementation of the proposed Master Site Plan will have no effect on the two identified historic properties, given adherence to the *DFC Historic Preservation Plan*. 1 2

However, the following correction is needed:

Page 95, *Anticipated Consequences*, line 5 - Change "neither" to "both". On July 19, 1996, we concurred with your determination that both of these properties were eligible under Criteria exception G. 3

If we may be of further assistance, please contact Kaaren Hardy-Hunt, our Intergovernmental Services Director, at (303) 866-3398.

Sincerely,

James E. Hartmann
State Historic Preservation Officer

JEH/KH

Colorado Historical Society
The Colorado History Museum
1300 Broadway
Denver, Colorado 80203-2137

Response to Comments as numbered on the following correspondence:

1. Comment noted.

2. Comment noted.

3. The requested correction has been incorporated into the Final EIS document (see Sections 3.3 and 4.3).

Ms. Lisa Morpurgo
Portfolio Management (8PP)
U.S. General Services Administration
Building 41-Denver Federal Center
P.O. Box 25546
Denver, Colorado 80225-0546

April 14, 1997

Dear Lisa:

Thank you for the opportunity to review and comment on the Denver Federal Center Master Site Plan Draft Environmental Impact Statement. As a member of the Planning Advisory Committee representing the Trails and Wildlife Committee, most of my concerns have been addressed in the Master Site Plan. I think that the plan is excellent in terms of addressing open space and the need to differentiate between active and passive recreation areas. I strongly support the adoption of the proposed master plan to guide future development at the Denver Federal Center in a thoughtful, well-conceived manner.

Based on a review of the Master Plan and draft EIS, I offer the following comments:

1. Page 27, DEIS: Given that Detention Pond #3 is an area identified as wildlife habitat, I continue to recommend that a minimal amount of water be retained in the pond at all times. If clean-up and channelization work is undertaken, it should be programmed at times that are least critical to wildlife. I am pleased that in the Master Plan the recommendation is included to leave an unmowed buffer around the ponds and to provide a site perimeter buffer along the north edge of the Federal Center. These are additional habitat benefits. 1

2. Page 28, DEIS: The water quality of the ponds is a concern since they are used by wildlife. The statement is made that "no ongoing surface water quality monitoring operations have been conducted at the DFC in recent years....". I recommend that more consistent water quality monitoring be included in GSA maintenance operations. 2

3. Page 91, DEIS: It is stated that the proposed action will have no impacts to vegetation. If the open space guidelines and standards in the Master Site Plan are implemented as proposed (pages 64 & 109, site improvement plans pages 8 through 11), there will be beneficial impacts to the Denver Federal Center. 3

4. Page 92, DEIS: It is stated that there will be no impacts to the wetlands under the proposed action. If the improvements to the detention ponds described in the Master Site Plan (pages 10-11, Site Improvement Projects, page 64) are implemented, there will be a beneficial impact to wetlands. 4

5. Page 93, DEIS: It is stated that there will be no impacts to wildlife resources under the proposed action. If the site improvements mentioned above are implemented, there will be a beneficial impact on wildlife. I am pleased that a distinction has been made in the use of open space for active versus passive recreation. As stated on page 56, Master Site Plan, "Active recreation uses, such as sports fields and paved trails, can be considered on a limited basis for open space areas. They should be in large, open areas where activities do not hinder wildlife habitats..." As I have commented in the past, the introduction of active recreation uses such as ballfields and its attendant ground leveling, fences, seating, noise etc., is not compatible with maintaining wildlife habitat. While the DFC offers great opportunities for additional pedestrian trails and bikeways, the introduction of sports fields needs careful consideration if areas for passive recreation and wildlife habitat are to be protected. 5

6. Page 101, DEIS: It is stated that the proposed action will have no impacts on recreation. I am pleased that additional pedestrian linkages are being proposed in the Master Site Plan and that the statement has been included that "Trails should not be constructed in buffers, but may be placed along the perimeter of buffer zones or in open space reserve areas (page 64). If the pedestrian connections proposed in the Site Master Plan are implemented, there will be beneficial impacts to recreation. 6

7. One item that is not included in the site improvements in the Master Site Plan that I think needs to be addressed at the DFC in a comprehensive manner is weed management. In particular, purple loosestrife is a concern at the detention ponds. 7

8. One last question: Will the Figure 6: Proposed Master Site Plan included in the DEIS be added to the Master Site Plan document? 8

Thanks again for the opportunity to comment.

Sincerely,

Christine Pfaff

Christine Pfaff
Trails and Wildlife Committee

Christine Pfaff
Trails and Wildlife Committee
Denver Federal Center

Response to Comments as numbered on the following correspondence:

1. Comment noted. These recommendations will be taken into consideration by the GSA.

2. Comment noted. This recommendation will be taken into consideration by the GSA.

3. Comment noted.

4. Comment noted.

5. Comment noted. This recommendation will be taken into consideration by the GSA.

6. Comment noted.

7. Comment noted. This recommendation will be taken into consideration by the GSA.

8. This figure appears in the Master Site Plan as Figure 5-1.

10 March 1997

Ms. Lisa Morpurgo
Portfolio Management (8PP)
U.S. General Services Administration
Building 41 - Denver Federal Center
P.O. Box 25546
Denver, CO 80225-0546

RE: DFC Master Site Plan Draft Environmental Impact Statement

Dear Ms. Morpurgo:

Thank you for sending us a copy of the Draft EIS for the adoption and implementation of the proposed Master Site Plan for the Denver Federal Center. Your cooperation allows us to provide our students and community patrons with current, relevant government publications.

Our patron response to the DFC Draft EIS has been significantly more than we anticipated. I am writing to inquire about obtaining an additional copy of the EIS. If an additional copy is available, it may be sent to the following address: 1

Colorado School of Mines
Arthur Lakes Library
1400 Illinois St., P.O. Box 4029
Golden, CO 80401-0029

Thank you for your attention to our request. If you have any questions, or an additional copy is unavailable, I may be reached at *cvantass@mines.edu* or (303)273-3695.

Sincerely,

C. Van Tassel

Cathy Van Tassel
Library Tech. II
Colorado School of Mines
Arthur Lakes Library

Cathy Van Tassel
Colorado School of Mines
1400 Illinois Street, P.O. Box 4029
Golden, Colorado 80401-0029

Response to Comments as numbered on the following correspondence:

1. As requested, an additional copy of the Draft EIS document was sent to the enclosed address.

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